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MENTAL GROWTH AND CONTROL

BY

NATHAN OPPENHEIM, M.D.

Author of "The Development of the Child," "The Care of the Child in Health," "The Medical Diseases of Childhood," etc.

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To

R. E.

PREFATORY NOTE

CERTAIN books of counsel, teaching young men and women how best to shape their ideals and their lives, played an honorable part in the literature of the nineteenth century, particularly in America, where aspiring youth is eager to learn the secret of noble success. These books, so gratefully remembered by older men, have long since become powerless to aid a younger generation, and their place has not yet been worthily filled. It is our intention to issue a short series of small volumes that shall fulfil the mission of the best of these obsolescent manuals. No one mind, no single experience, would suffice for such a task. Each special field, each special group of personal problems, must be treated separately. There is the problem of the body — how shall its mechanism be perfected and kept in repair; the problem of the mind — how shall its latent powers be wisely developed; the problem of the spiritual nature — how shall it be best nurtured. Each is

to be treated by one who has given long-continued thought and effort to that particular subject. These are fundamental problems, which all young men and young women must consider. There are others that appeal to great classes of the community: the securing of an education when college is out of the question, the management of life at college, the choice of a profession — to mention no more — and each of these is also to be treated by men of special knowledge and experience.

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MENTAL GROWTH AND CONTROL

CHAPTER I

The Growth of Character

The growth of a human being from childhood to manhood is one of the most stimulating things that we know of; it is, as one of our ablest educators has said, "a splendid and impressive sight." The human being begins as a speck of vitalized protoplasm that develops in dark and in secret. He comes into the world helpless, complaining. He straightway begins to struggle with the world and all its chances of benefit and harm. His body may be well nourished or held back by sickness and bad care, but it is a tangible thing, whose good or bad state may easily be seen. Just as surely his mind grows, but less plainly, and the growth is less easily seen. The effects are there; the mental man is being formed just as surely as the physical. The body keeps on developing for a certain length of time till maturity

arrives, the time of active work, then growth ceases; an even level of strength is now kept up, until middle age comes on, when the physical resources begin to decline. Slowly weakness creeps on, and each year finds the man less able to withstand wear and tear than the last one. And thus old age arrives, when once more we are apt to be weak and complaining.

The mind during all this time does not keep an absolutely even pace in its progression. It has a varying work to do, and its preparation for the work is commonly not well understood. It differs from the body in being more influenced by environment than by heredity. It starts out as a fluid, whose final, crystallized form is the product of the forces that have been working upon it. Good and bad, wise and unwise, are influencing it every day, every hour. There is the same struggle between these influences that there is between animals in a primeval land or trees in a forest. Those that are naturally strong and have the most favorable environment grow briskly; those that are less fortunately placed die out. And all this time the man knows nothing of what is going on. He is totally unconscious of being

a battlefield where one sort of victory or another must be decided. He simply seems to live his little life, to have his ups and downs, to accomplish big or small things, to be happy or miserable. He is the last one, until the matter has passed beyond the chance of interference, to realize that he could have done much to decide the growth and conflict.

There can be no doubt that growth involves conflict, for our natural development brings out all sorts of impulses that need shaping to fit them in their place in the world. The mere fact that society is made up of a great number of persons means that some sort of artificial regulation must be made to keep them from rubbing too hard against each other. This set of regulations we call our laws and civilization. One man fits into them well, and is called useful and law-abiding. Another fits badly, and we call him useless and disorderly. It is not merely a question of right and wrong, for the standard of right and wrong changes with the change of time and place. Even such fundamental things as honesty, modesty, and filial duty are to a large extent the products of individual civilization. It is extremely hard to

find such a thing as natural right, and about equally hard to find the natural wrong. When a community finds that a certain course of behavior, in the logical action of ethical evolution, is good, then we straightway have a definite decision that that behavior is right. And after a similar fashion wrong grows into being. The distinction between these two things is a relative one; and the sooner we recognize this relation, the easier and more certain will be our tendency in the favorable direction.)

No human being, with the natural frailties of humanity, has or can have so perfect a reaction to our environment that he is all good. "No man can absolutely characterize his neighbor. No man can absolutely characterize himself. Every man is good. Every man is bad," said Bishop Brooks, the large-minded and large-hearted preacher. He who, consciously or unconsciously, learns easily the lessons of the conditions of ordinary life is easily and rapidly successful in various ways. But if these lessons come hard, if he has failed to understand them and the principles for which they stand, then for all his days he will fight against the world as little boys kick against

the door of the dark room in which they have been confined. His fight will of course be futile, and he will certainly fall into a final state of subjection. The pitiable thing is that his life has been wasted, the lives of those who are dependent upon him have been clogged and fettered, and nobody is a whit the better for all these unnecessary pains. When such a man dies the world says of him, "He died as the fool dieth." He has encumbered the earth, his place should be taken by a better man.

Every one of us has to learn how the fight is conducted, and that means that we have got to learn how to live. According to the wisdom and resources of our parents we get as good a preparation as they can give us. But commonly one great factor has been forgotten, and that is the youth's knowledge of himself. When a young man goes into a business or a profession, every means is employed to make him familiar with its conditions and requirements, its tools and its rules of competition. If he is ignorant of them, his failure is counted as foregone. For an occupation means struggle, the fight to do better than one's competitors. There is certainly as much

reason for him to have an equally thorough training for the vocation of living, because life is as much of a battle as anything we know of. It is a battle with outside foes, as well as those that are within us. The preparation is learning what one's self is, how the human mind works, what life means, what there is to be extracted from it, and by what methods we may obtain the good and escape the evil.

Usually this knowledge is learned in a very practical way, from hard experience. A boy grows into youth and manhood, he comes into the heritage of his faculties, and he knows almost nothing of his mental possessions, his intellectual and moral assets. He wants to understand the world; but he knows nothing of the faculty of attention, of observation. He finds himself assailed by countless impulses of ambition, envy, jealousy, love; but he knows nothing of the force of instinct, nor how it sways him. He finds himself acting in certain predetermined ways, doing the same things always in the same manner, being influenced time and again by impressions that he does not and cannot define; for he is ignorant of the great power of habit and association. Sooner

or later he may obtain a glimpse into the lovely world of imagination and emotion, and he will not know how to widen his breadth of vision; or he may be to all intents and purposes blind to it, and then he will wonder what other people are thinking of when they claim to get pleasure and profit from a cultured taste in music, in painting, in art, in literature. He may join a church or be a sceptic, but in either case he will be unable to make clear to himself the grounds for his choice, or recognize rightly the tremendous strength for good or bad that religion possesses. In short, the great impulses of his life will remain mysteries, he will be tossed to one side or another from lack of guidance, he must surmount numberless obstacles before he has a fair chance of happiness or success.

The time for you to get an inkling of all this is in your youth, while your mind and character are not finally formed, while the great conflict between your natural impulses is going on. That is when you must learn what growth means: the constant watchfulness of yourself, the discouraging of unfavorable traits, and encouraging of helpful ones. That is when you

must realize that your future career has not been settled beyond hope of change, and that you may make it great or small. There is nothing more dwarfing in its effect than fatalism, the idea that events are going to turn out in a certain way no matter what efforts are directed to influence them. You must come to realize that, after all, the decision in regard to your acts and your fate belongs to you, and that you have within you forces which may lead to the noblest achievements. They are there; you have but to dig deeply enough for them, and they will be yours. You must recognize that you are the keeper of great responsibilities, that your possibilities must be administered as a sacred trust, that through all the years you must guard your actual and potential powers as you would guard precious things. You ought to know that any stagnant, lifeless condition of mind is a crime against yourself and against all who come in contact with you; that you have a master whose name is Duty, whose task is the work of never-ending usefulness. This is what the idea of growth is to teach you.

To know all this means a knowledge of the

growth and control of your mind; and the following chapters are designed to make you acquainted with the important facts which are involved and their practical application. Before you attempt to acquire this knowledge, you must free yourself from certain beliefs that have been handed on from one generation to another, up to the present time. You must absolutely rid yourself of the idea that the mental condition is an entirely fixed one, which is beyond all expectation of moulding and adjusting. Your ancestors and mine continued to believe in that fallacy for centuries; and the belief did as much as anything could do to limit their intellectual and moral growth, to make real improvement no more than a blind chance of blind experience, of unreasoning uncertainty. It was hard for them to conceive of a man's controlling the impulses and workings of his body — such power they attributed to various sorts of mysterious and supernatural forces. But to control the impulses and workings of the mind never seemed in any practical fashion even remotely possible. The mental functions seemed quite distinct from the bodily, they touched on matters not easily under-

stood, they were put aside as if they belonged to the province of holy things.

We know well enough nowadays that such beliefs are unreasoning and superstitious; and you need no proof to convince you that the functions of the brain are as much subjects of inquiry as those of the heart or the stomach or the bones. The more you understand about any organ, the better must you know how to use it; and this applies as surely to one part of the body as another. Most of the really valuable work that you may do in life will be done by your brain. And if you understand what that organ is, what its functions are, what you may and what you may not expect from it, how to get the best results from it while avoiding the numberless avenues of waste and vicious action — if you know all this, your opportunities of success will be indefinitely increased. In proportion to your knowledge, your methods of life will change from haphazard to clearly defined and reasonable rules of action.

This rational conduct means freedom from intellectual slavery; it means the ability as well as the disposition to think over matters that

require decision, and to form a conclusion on sufficient grounds. If you cannot do thus, you can scarcely be said to have principles, outside of kindergarten rules. Your beliefs are not the outgrowth of your own vital convictions, they have no moving force to them, and they accomplish no work in the world. Your religious creed has no saving grace in it, your political creed is that of the timid middleman and time-server, your moral and ethical creed dissolves at the first gusty wind of temptation. Such a man accomplishes nothing; he creeps along at a slow and uneventful gait, and he may call himself fortunate if his weakness results in no positive injury to others. He is separated, as opposite poles are placed, from the man who possesses the habit of deliberation, of thoughtfulness, of enlightened reason. These are not the only things that the development of your character is to straighten out. You must by all means acquire the nice poise of bearing and demeanor that is a sign of a well-balanced mind. Your manners must be even, easy, showing faith in and respect for yourself. No cringing to your worldly superior or bullying your worldly

inferior may be tolerated for an instant. The cringing would show you to be a coward, the bullying would mean both cowardice and viciousness. You must learn how to be direct, simple, frank; you must know how to look your fellow-man straight in the eye, how to be courteous and deferential to women, how to be affectionate and patient with children. Your demeanor must not be assumed as a garment to hide opposite traits or to prepossess the world for any purpose of expediency. That course would be far worse than uncultured crudeness, for to the unfinished quality there would be added the vice of deceit. But it must be the light of a genuine feeling which shines through your ordinary words and acts, it must be the sentiment of real intention which means well by yourself and all others. All these qualities are not necessarily born with you; in addition, they are not necessarily a part of your educational training. Without regard to such conditions you can make these strong characteristics your own, if you once obtain the power of undivided attention and clear analysis, of understanding the true relations between your

mental workings and their outward expression in conduct.

Do not for a moment believe that these considerations are merely theoretical, without a strong, practical bearing on the plain, every-day facts of life. On the contrary, such things are the very foundation material of successful endeavor. It makes absolutely no difference whether you are to live the life of a business man, a professional man, or a man of leisure; the same general rules of conduct hold good in all circles. Commonly the business man is supposed to be farthest removed from theories, and to be best fitted for his career if he represents practical action to the greatest possible extent. But no action can be of a high degree that lacks the backing of ordered and conscious intelligence. And the core of such intelligence is a knowledge of what the mind does, and how it does it. The fine factor in this thought is that every part of a man's life must be favorably influenced by such enlightenment; for it applies as well to his moral and spiritual as it does to his purely intellectual parts. For this reason you can easily see that a merchant may

be honest, conscientious, fair-dealing, high in his ideals, courteous, and chivalrous, without being any the less successful. He may have fully as keen an eye for opportunities, as sharp a business sense for the wants of his public, as clear-cut a way of buying and selling, as his less-instructed neighbor. But in addition he has certain great advantages; the business community trusts and respects him, it holds him up as a standard of worth and solidity, and when occasion calls for responsible men, he is the first to be chosen. (Everybody prefers to deal with a high rather than a low type of man, everybody feels safer in the hands of the one than of the other; and deep down in everybody's heart is the admiration for truth, loyalty, and uprightness.)

All this applies to every sort of calling. You need not worry about the character of your work. There is as much honesty and as much honor in making good boxes as good books, there may be as fine a mission in supplying food for the body as for the mind. Only let the work be done fairly and squarely enough, faithfully enough. It is a common experience that a man will become surfeited with refinements and conventionalities,

cloyed with the sickly sweet taste of the artificialities which he meets when he lengthens too much the distance between his work and healthy simplicity. And then we see such strange sights as a statesman chopping down trees, a king turning watchmaker, a financier becoming a breeder of livestock. Thus do the elemental characteristics of men assert themselves, thus do the forces of nature triumph over every tendency that is non-natural. There is a sign of health in this, the health that eats and sleeps heartily, that performs simple duties unquestioningly and faithfully, that struggles with plain forces in the open until they have been overcome. There are manliness and vigor in such a life, enjoyment of body and repose of mind. And with it there may be in undiminished possibility an elevation of character that beyond doubt is priceless. Hans Sachs, while cobbling shoes, made the songs of a nation and helped to shape the emotional growth of the civilized world. Spinoza worked out an immortal system of philosophy while grinding lenses. They had a noble simplicity that saw no shame in soiled, coarse hands, that dignified their labor with a touch of consecration.

Now take these few thoughts to yourself, and get what good you can out of them. They contain more of the whole truth of life than many a high-flown system of abstract thought. And above and beyond all things resolve to accomplish something, to get things done. The hell that mere intentions lead to cannot be better typified than in the whole life of the petty, fearsome man. It makes very little difference what you do, so long as you do it with intensity and enthusiasm. You must work hard, think hard, love hard. You must from time to time make an inventory of yourself, find out what good and bad parts there are to you; and then, after trying to make the good better, and the bad less bad, you must gird yourself up as for a battle, and prepare to struggle for the noblest things. Make up your mind that your whole life will be a struggle — a struggle against weakness and temptation, against sickness and misery, against shams and falseness of all sorts. There will be a struggle with the world, with open enemies, with yourself. And every time you allow yourself to be beaten, every time you fail to accomplish the thing you set out to do, another step has been taken toward

that bourn where the incompetent wither and shrivel up. All life, as far as we know, means strife, and progress is assured by the defeat of the weaklings. There is no growth that is not fed by the decay of the conquered, who ought to ask no better fate than to make a fertile ground in which their superiors may flourish.

The question, in the last analysis, comes back to the fact of individual effort. Ancestry counts for something, but not much; social position is good enough to amuse one's self with in times of relaxation; wealth has advantages which in fortunate cases may be great enough to offset its disadvantages. But the man who sees in life the opportunity to express himself in the largest terms, who after ascertaining what faculties he has determines to develop them to the highest possible efficiency, who is capable of seeing the sweetness and joy that lie all about him, who being proud dares not allow his body or mind to be defiled, he is the one who obtains the big rewards, the big successes. There is no mere theory in this counsel. It is the hardest kind of hard sense, the sort that sinks into a man's soul after sufficient experience, as a stain sinks into clear, dead wood.

"Health, happiness, and good repute, nay, even, in the long run, prosperity and wealth, are promised to, are given to, the man who lives uprightly and keeps his garments clean and his hands busy."

CHAPTER II

The Mind as a Machine

You are about to learn something concerning the mind; and, before you begin, it is surely desirable to know some of the elementary facts about the structure of the brain and spinal cord. Such information is really a very necessary thing, not only for the sake of helping you to get the most out of what follows, but also for the general reason of making you know yourself and how you are constructed. If you were starting to learn a trade or a business, you would want to know as much as possible about the mechanical principles of it. And similarly you ought to have a reasonable acquaintance with the machine that does your mental work. The information is not hard to get, especially if you are the sort of person who is not frightened by a few unfamiliar or long-sounding names. These names must be used

to designate certain parts, for they are the only names that we have. You must try to keep in mind that they came to be used because it could not well be helped. The worst ones are of Latin origin, for Latin was the common tongue of medicine in past times. All persons who made medical investigations understood and employed it; and only by its use could they make foreign people understand them. A few names of special parts are called after the men who first described them or best described them. But by all means remember that each name of Latin origin describes the location or form of the part in question, and that its employment is strictly a matter of usefulness and convenience.

In the very beginning you must rid yourself of the common belief that all mental action begins and ends in the brain alone. On the contrary, a very important part belongs to the spinal cord. Indeed, you ought to make no sharp distinction between these two parts, for their formation is practically continuous, and their functions are so bound up together that they remind one of the working of an intricate

but smoothly running machine. One might claim that the brain contains the higher and the spinal cord the lower centres. But even this cautious statement should be made understandingly, for not all of the brain centres are high, and also many of its high centres are brought into connection with the rest of the body by means of the cord. Speaking in a practical way, they are parts of one great nerve-structure, they have about the same formation in most of their parts, and they are pierced by a continuous aperture through which a common fluid — called cerebro-spinal — runs.

The brain, as every one knows, lies in the hard, bony skull which acts as its protector. There is need for this, for the structure of the organ is very delicate and easily injured. The spinal cord has a similar safeguard, but, because it lies in the back, its case must be jointed, as we know is the fact with the beautifully fitted vertebral bones. Surrounding the brain there are three membranes: the outer is comparatively thick and tough, and is called the dura mater; the inner is fine and thin, and has the name pia mater; the middle one is called, on account of

its delicacy, arachnoid, or weblike. The object of the dura mater is largely protective; that of the pia mater is more by way of holding and supporting a large supply of blood-vessels. The arachnoid seems to partake of the nature of both. In these envelopes the brain is surrounded by a clear lymph, which further protects it after the manner of a water cushion, and reduces the harmful effects of shock to a minimum. Thus the brain practically floats, and easily adapts itself to all changes of position. At the same time, provision is made for any increase or decrease in size, such, for instance, as might be caused by anæmia or engorgement. The blood-vessels which supply and serve it are likewise safely poised, somewhat as enmeshed fish are gently but securely set in a net. These vessels are so well protected that under ordinary circumstances they could not easily be harmed excepting by extreme violence or organic disease.

The brain, or cerebrum, is a double organ, and its right and left hemispheres are bound together by a bridge, or commissure, of nerve-structure that is made up of many strands. Below the cerebrum, or main brain, and con-

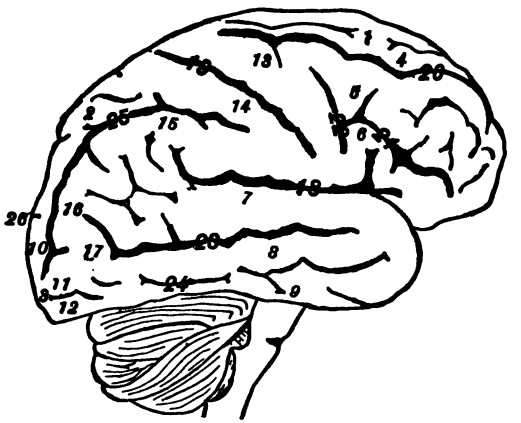
nected with it by a bridgelike structure, called the pons, is the cerebellum, or little brain. This part is likewise double, and its composition is the same as that of the cerebrum. Between the brain above and the spinal cord below lies the medulla oblongata, a wedge-shaped body that is small in size but great in the variety and complexity of its functional centres. Last of all, there is the spinal cord, which extends down through almost the whole length of the back, lying in the central cavity of the vertebral bones, through which it sends off its anterior and posterior nerves to the body at large. These nerves divide and subdivide to a remarkable extent, running to all the muscles of the limbs and surface. One set carries all impulses or messages from the outside world to the brain; the other carries back the resulting command of the brain to the body, and directs its action. This whole complex set of parts is wonderfully adapted to recognize what is going on around it, to register the changing conditions of the environment, and then to enable the body to act in the most advantageous way to meet the requirements.

The surface of the brain, as we shall later on see, is one of its most important parts. And therefore the more of it there is, the more possibilities of service does the organ present. For this reason the surface, or cortex, is not smoothly plain, but tucked in, as if the brain were really a long, thin body that was bent and coiled and twisted upon itself. This appearance is not so very far removed from the truth, at any rate as far as the division into convolutions is concerned. This surface layer, for a depth of about one-quarter of an inch, is the often-mentioned gray matter, and is composed of nerve-cells. The substance under it is called the white matter, and is made up of nerve-fibres. Both cells and fibres lie embedded in a soft, springy material, called neuroglia, which in addition holds a large quantity of lymph that makes its way there from the cerebral blood-vessels. Here again we have the same protecting principle of the water cushion, to take up all jar and shock and provide against injury. If you could examine the structure through a microscope, you would recognize what a beautiful piece of work it is, and how remarkably it serves its purpose.

These cells are exceedingly interesting, for in them or in their projections the characteristic exhibition of nervous energy takes place. They are very small, irregularly shaped bodies, from one extremity of which a projection, called the axon, extends; while from another a variable number of small branches, called dendrons, push their way into the surrounding tissue. The function of the axon is to carry away from the cell its particular form of energy; that of the dendrons is to bring to the cell the energy arising from outside stimulation which serves to start it to work. The growth and development of these structures in function, as well as in size, are slow and gradual. The development of the child is marked by the budding out of these processes, which do not reach their permanent state until after full maturity has been reached. For this reason the child's youthful peculiarities of both body and mind depend less upon insufficient experience, as you can easily understand, than upon the simple fact of an immature condition. The cells themselves constitute ten per cent or less by weight of the whole central nervous system, while the remainder is composed

of the axons, dendrons, and the neurons from which the dendrons develop. The cells of the new-born child are practically without these projections; and even when they do begin to grow, they are not immediately in a fit state for profitable use. The original structures must become medullated, must receive their proportion of chromatin granules, must, in short, go through the slow process of evolutionary development before they attain the ripe condition of adult activity.

Possibly you may be more interested in the gross than in the minute structure of the brain; and we are coming to it as rapidly as may be. Nevertheless, the fine parts are the things you must not lose sight of, for they represent the real type of activity. When you look at the brain as it lies in the open skull, you see nothing of this microscopic make-up; the eye distinguishes no more than the convolutions and the fissures which lie between them. Some of these are so large that they immediately attract the attention. First of all you notice a great cleft which separates the right and left hemispheres. Another large cleft, called the fissure



DIAGRAMMATIC SKETCH OF THE BRAIN, SIDE VIEW.

1. Frontal Lobe.
2. Parietal Lobe.
3. Occipital Lobe.
4, 5, 6. Three Frontal Convolutions.
7, 8, 9. Three Temporal Convolutions.
10, 11, 12. Three Occipital Convolutions.
13. Ascending Frontal Convolution.
14. Ascending Parietal Convolution.
15. Supramarginal Convolution.
16. Angular Convolution.
17. Cuneus.
18. Fissure of Sylvius.
19. Fissure of Rolando.
20, 21. First and Second Frontal Fissures.
22. Præcentral Fissure.
23, 24. First and Second Temporal Fissures.
25. Parietal Fissure.
26. Parieto-occipital Fissure.

of Sylvius, runs from the base of the brain upward and back. There is another large cleft, the fissure of Rolando, which begins on top at the great longitudinal cleft, and runs downward and forward, almost meeting the fissure of Sylvius. It is easy to get the plan of these three fissures firmly fixed in your mind; and, if you do, there will be less trouble in learning the other dividing marks. In addition to these three there are secondary fissures, such as the first and second frontal, the præcentral, the first and second temporal, the parietal, and the parieto-occipital. These names, because they are unfamiliar to you, may seem hard, although as a matter of fact they are not. Indeed, if you refuse to be scared by the first sight of them, you will find them very easy, and excellently descriptive. Thus, first and second frontal stand for the corresponding convolutions of the frontal lobe, the foremost lobe of the brain. Temporal refers to the lobe near the temples, parietal means the side lobe, and occipital represents the lobe in the back.

In a seemingly complicated organ like the brain no method of naming parts could be

simpler than this plan of fissures. It is as easy as an ordinary plan of naming streets and avenues. Thus, the fissure of Sylvius runs between the temporal lobe below, and the frontal and parietal lobes above. The fissure of Rolando separates the parietal lobe behind and the frontal lobe in front. The two frontal fissures run between the three frontal convolutions, exactly as two streets run between three blocks of houses; and similarly the first and second temporal fissures separate the three temporal convolutions from each other, and according to a like plan the three occipital convolutions have received their names. If you will look at the plates, you will see that the fissure of Rolando separates the ascending frontal from the ascending parietal convolution, the supramarginal convolution lies above the upper end of the fissure of Sylvius, and the parietal fissure divides the upper parietal convolution from the lower parietal and angular convolutions.

It is well worth your while to make yourself familiar with the diagrams, as well as to observe the shapes and relative positions of the lobes. You will shortly lose the exaggerated respect,

or rather fear, which prevents you from thinking with ease about the action of the brain. Being ignorant of these things, almost any statement would interfere with the pleasant progress of your knowledge. Thus, if you read that a certain impulse arises in the island of Reil, you are apt, being in fear of the name, to become confused about the whole matter. But if you know that the island of Reil means no more than a number of inturned convolutions which are grouped in the fissure of Sylvius, you accept the statement with confidence and peace of mind. Some parts of the brain have been named from their relative position to other parts, or to a fancied resemblance to common things. For example, there is a lobe, easily seen in the interior when the hemispheres are held apart, whose shape resembles that of the human tongue, and therefore it has been called the lingual lobe. Likewise, a portion at the back of the brain is wedge-shaped, and accordingly has been named the cuneus. Again, the gyrus fornicatus, in the interior, bears a likeness to a somewhat irregular arch; and when you know this, an elementary knowledge of Latin will make you see the meaning of the name.

These and other portions of the brain are only to a small extent made up of cells. By far the larger part, as was stated above, consists of nerve-fibres. These fibres have the highly important work of connecting parts and tracts of the central nervous system, and thus serve much the same purpose that wires do in connecting the parts of a system of telephones. The fibres may be divided into four different classes, and each set has its special work to do. The *association* fibres are of various lengths, and connect various convolutions with each other. The *projectional* fibres radiate from the gray matter of the surface toward the base of the brain, from which it is generally believed they proceed to the so-called pyramidal fibres of the spinal cord. The *commissural* fibres have in the main a horizontal direction, connecting as a rule similar parts of the hemispheres. The *terminal* fibres seem to be somewhat less understood than the others; but there is good reason to believe that they serve as a means of connection between the surface cells and the deeper fibres of the cerebrum. In the cerebellum, or little brain, a similar arrangement, especially of the

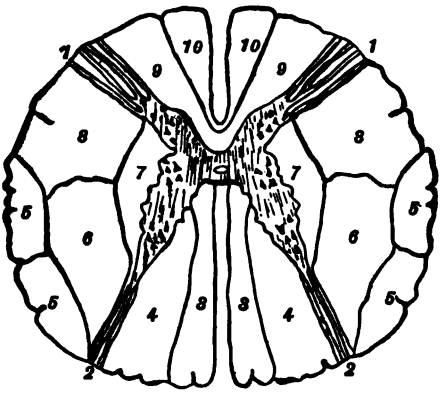
association and commissural fibres, exists; and this, in view of what we know about the cerebrum, is quite what we should expect.

The cerebellum is also composed of a cortical cell layer, which surrounds an internal white substance composed of fibres. Here again there are two hemispheres, which are joined by a so-called bridge, or pons. By means of these fibres its cells are brought into connection with the other parts of the central nervous system and its appendages. Although the cerebellum, on account of its position and structure, seems clearly related to the cerebrum, nevertheless its nerve-fibres are evidently continuations of certain parts of the spinal cord. This is only one example, although many exist, of the statement made above, that it is difficult to draw a hard and fast line between the different parts of the whole system. Try to remember that these divisions are mainly for the purpose of convenience, and therefore are more or less arbitrary.

A very important part that lies in close neighborhood to the cerebellum is the medulla oblongata. Although commonly spoken of as a

distinct body, it is really the upper and enlarged portion of the spinal cord. It is also made up of halves, and is composed of white substance or nerve-fibres, through which groups of gray matter or nerve-cells are scattered. This gray matter is the beginning of some important nerves that radiate to the head and face; the medulla, as a whole, is the seat of a large number of vital centres about which you are going to read more a little later on. These centres are so important as well as so numerous, that the medulla may well be likened to a sort of central station in the telephone system already mentioned.

The spinal cord lies in the cavity of the vertebral column. Its form is long and cylindrical, with an enlargement at its upper and lower extremities. It has three membranes, whose names and functions are the same as those of the similar membranes of the brain. It may be divided into eight strips or columns, which are arranged symmetrically, four being on each side. The cord, like the brain, is composed of white and gray matter; but, unlike the brain, its white matter is on the outside, while the



DIAGRAMMATIC SKETCH OF A HORIZONTAL SECTION OF THE SPINAL CORD.

1. Anterior Nerve Roots.
2. Posterior Nerve Roots.
3. Column of Goll.
4. Column of Burdach.
5. Cerebellar Column.
6. Column of Tuck.
7. Mixed Lateral Column.
8. Anterior Radicular Column.
9. Fundamental Column.
10. Direct Pyramidal Column.

gray is within. If the cord is cut straight across, its appearance reminds one somewhat of a butterfly in the middle of a rough circle. The front projections of the gray matter are called the anterior horns, and those of the rear the posterior horns. From the anterior horns the anterior spinal nerves project, and serve as the tracts for the passage of motion impulses. The posterior nerve-roots grow off from the posterior horns, and transmit impulses of feeling. These nerve-trunks make their way out between the spinal bones, and thence are distributed over a large part of the body.

When we come to consider the work which this machine does, we touch upon as fascinating a subject as we are well able to imagine. We know that nerve-fibres are the means for conducting energy, and that the impulse finds its way to the surface cells of the brain. These paths to and from the brain have been beautifully demonstrated, so that absolutely no doubt remains about the course which impressions, made from without, take in the process of being recognized. Equally well we have come to possess considerable knowledge of the so-called centres, areas

which when stimulated give rise to certain constant effects. These centres may be compared to the ordinary central stations, of which there may be an indefinitely large number, in the telephone system of a great city. Each "central" serves a certain number of subscribers, who can be put in communication with any other subscribers only through their own "central." That is just like the arrangement in our brains and bodies. The speech centre is quite distinct from the visual centre, but they may be connected by the association tracts, which act as a sort of switching device. This matter is so important that every one should have at least an elementary acquaintance with it. Thus, for instance, if a boy moves his right arm, we know positively that some form of stimulation has acted upon the cortex of the left hemisphere, in the region of which the ascending frontal and ascending parietal convolutions are the core. Conversely, we may produce movements of that right arm, even if the boy is unconscious, by stimulating this so-called motor area, different parts of which control the trunk and extremities. If the upper quarter is in action, the leg moves; the second and third quarters

govern the arm; while the lowest or fourth quarter corresponds to the face, tongue, and larynx.

There are a number of other centres in the cerebrum that are equally interesting. For example, in the third frontal convolution is the speech centre; and if this part suffers injury, the person becomes dumb, although his vocal organs may be perfect. Similarly, if the wedge-shaped area in the parieto-occipital region, which is called the cuneus, is harmed, blindness follows. In the first and second parts of the second temporal convolutions is the centre for mental or word deafness; and an injury to this region means failure to remember or understand any word, no matter how familiar, although the sound is perfectly heard. Dr. Munk devised a famous experiment which demonstrates this very thoroughly. First of all he taught a dog to grovel or crouch at a signal given by word or the snapping of a whip. He then removed the part of the brain in question, on one side only, and cared for the beast until the wound healed. To complete the preparations, he stuffed the dog's ear on the other side, so that only the injured side of

the cerebrum would be called into play. At the familiar sign of voice or whip, the animal did nothing more than prick up his ears, thus showing that he heard the sound, although he was unable to grasp its meaning. Munk then clinched the experiment by clearing out the occluded ear, when the dog immediately understood the sign, and responded to it promptly and perfectly.

Another interesting centre with which we are well acquainted is in the island of Reil. This is the so-called centre of paraphrasia. Let us suppose, for the sake of illustration, that some sort of injury has happened to this area, so that the tissues are crushed and their functions abolished. The person would then use words wrongly, would say one word when he meant another, and thus would be forced to make pitiably ridiculous sentences. At the same time he would be physically capable of saying the words as well as understanding their meaning. This, however, is no more remarkable than the strange fact of word-blindness, or inability to recognize a written word, which results from injury to the angular gyrus. Again, the writing centre is supposed to be seated in the rear part of the second frontal convolution.

If this centre cannot act normally, the person is unable to write, although his hand, his eyes, and memory of words and writing are unimpaired. These statements are very bald, and give no indication of the great amount of energy, ingenuity, and perseverance that the many observers have devoted to the subject. For before one fact has been fully accepted as such, every possible objection to it must have been adequately met and overcome. If scientific men were not conscientious about demanding absolute proof of every statement and belief, I could tell you of many more interesting centres, whose existence has been reasonably but not absolutely demonstrated.

All these are not what one would call the highest centres. They act from stimulations of sense alone, rather than from more abstract considerations. The greatest heights of mental action are attained by animals whose frontal lobes are most fully developed, and in man the extreme growth occurs. The processes of judging, considering, choosing, are performed here, and an injury of these parts or arrested growth of them interferes proportionally with their

functions. Moreover, we find that, as we go down the scale of animal life, there is a progressive decrease in the size of the area; and likewise the greater amount of work that is performed by lower centres gives them a proportional development. Thus, the area of smell must be and is highly developed in the dog, and in some human beings it might be rudimentary; that of sight is very large in some animals and birds, while in the brain of the late Laura Bridgman it was found to be very much withered. In birds the cerebellum, wherein is located the centre of coördination and balancing, is very large; but in fishes and the clumsy animals such fine provision is lacking. It is exceedingly instructive to notice how beautifully and gracefully a pigeon balances himself during flight, and then to compare this action with his heavy, clumsy floundering after his cerebellum has wholly or in large part been removed. The actions of an animal whose hemispheres have been removed are automatic or reflex; and this conclusion immediately gives an idea of what the functions of the spinal cord are.

This part of the central nervous system may

be regarded as the main protector and helper of the brain; for its activity is maintained whether or not the cerebrum is doing its work. The lower centres are those which have a capital part to play in the ordinary and necessary acts of keeping the body alive; and therefore they ought not to be, and are not, dependent upon any conscious force of reason, that at times may wake and at others sleep. Thus, we find that the centres for respiration, for swallowing, for chewing food, for contraction of blood-vessels, for control of the heart's action, for the governing of the various muscles that are concerned in speaking, for the regulation of the muscles which produce the act of vomiting, are not dependent upon the brain. All these centres belong in that part of the cord which we call the medulla oblongata. Below it there are such special centres as those involved in sphincter-control, in sexual functions, and similar acts.

In addition, one of the important duties of the cord is the transmission of impulses between the body and the brain. Such impulses may be either sensory or motor, the only difference being the different nerve-roots along which they pass.

Thus, if a person by accident allows his hand to come in contact with a piece of hot iron, the sensations of pain and heat, plus the sight of the iron, induce him to pull the hand away as quickly as he can. The purely sensory impulses travelled from the skin to the end-plates of the nerves underneath, along the nerves to the posterior nerve-trunk of the spinal cord, into the cord, where they crossed over to the opposite side, and then to the brain, where they were translated into the terms which experience has given them. The return message began in the motor tract, from which it progressed through the medulla, through the spinal cord, emerged through the anterior nerve-roots at the proper level, rushed along the nerves to the involved muscles, which thereupon contracted with remarkable rapidity to produce the desired movement.

You have now read a slight and rapid sketch of what our brains are doing, and the general manner in which they perform their work. Many things have necessarily been left untouched; but enough has been given to show that our mental actions are controlled by definite laws of cause and effect. Whoever wants to know

about the way his mind works must first of all understand that nothing occurs purely by chance. And whoever wishes to control the growth of his mental powers must as a beginning recognize that the task calls for honest effort conscientiously carried out. The task can be accomplished, the benefit can be obtained ; but honesty of effort must go in exchange, and humility, and directness of endeavor. One great thing we must never forget: the nervous system is a machine, and yet more than a machine ; for it has the wonderful gift of life. And this gift means that a stationary condition is impossible. We must either go forward or back, and the choice lies with ourselves. We are ever at the parting of the ways, so that the choice between good and bad rests with ourselves alone. In the remainder of this book, as we progress from one topic to another, you must ever be mindful of the plain and undisputed foundation of physical construction which supports every manifestation of mental life. The facts are not mysterious, and the methods of knowing about them are as plain as those in any other science. And above all else, they are intensely interesting.

CHAPTER III

The Power of Attention

The subject of attention is one of the first that should be considered after you have obtained some knowledge of the brain; for it is an elementary mental process without which you can scarcely hope to become familiar with the actions of the mind. You have seen how impressions are made upon the brain, and now you must understand how to get the greatest amount of good from them, as well as how to control them in ways that are advantageous to you. Not only must you know what attention means, but also you must clearly appreciate where a deficient faculty of attention is bound to land you. When you perceive so much, you will be prepared to take up the natural extensions of the subject.

The monks of Mount Athos were said to have had a certain exercise in contemplation which led them to experience beautiful sensations. Each

one was to retire to his cell, allow the chin to rest on his breast, and contemplate the centre of the abdomen. If this were continued long enough, the holy man was supposed to see beautiful things, "a mystic and ethereal light." This instance has been cited many times as the effect of attention and of the remarkable things that attention can accomplish. And yet it is not by any means an example of this faculty; it entirely misses the characteristic part of attention; and it demonstrates finely the need that most people have of defining accurately what they mean. This lack of clearness is brought about by their equally deficient power of attention. For of all intellectual imperfections this is, in all likelihood, one of the commonest. At the same time attention is a faculty of such fundamental importance that the possession of it is absolutely indispensable to the doing of any thorough or large piece of work.

The power of concentration has always been much thought of; and most persons, after the manner of fallible humanity, seem rather to admire it in others than endeavor to cultivate it in themselves. This may be easily seen by the opinions of great men on the subject. Carlyle is

reported to have said that "Genius is the power of continuity." In New England there is a common saying that "Genius is the power of stick-to-itiveness." Buffon, the naturalist, believed that "Genius is no more than great patience." Helvetius, a renowned French philosopher of the eighteenth century, used to say that "Genius is only prolonged attention." Nevertheless, the ordinary youth does not seem to know that there is such a thing as attention, and he certainly does not regard it as a subject of study and thought.

No matter how far all this is true, one cannot deny that the power of sustained attention is a priceless one, for there is no other that so directly enables us to use all our energy with the least waste. · Its action resembles somewhat that of a dam which so collects and stores the waters of an otherwise weak and useless stream that they obtain the power to do much work. It thus converts waste matter into a productive means. · Of course, one does not expect a brooklet ever to accomplish as much as a large stream, even if many dams have been built to help it. And similarly a strong, well-stored mind must under equal circumstances of training and environment surpass the

efforts of a weak and barren one. Radically unlike abilities can never be made alike. But each one can by proper training and care be brought to do work which otherwise would have been impossible. Within normal limits the development of this faculty is not only highly advantageous but also absolutely essential to commendable growth of mind and character.

The first thing to know, in trying to find out the best method of development, is the real meaning of the word attention. And the simplest way to define it would be something like this: attention is that faculty of the mind by which it picks out one special thing and grasps its meaning in a sharp, clear, and well-defined fashion. The amount of real understanding that accompanies it is immaterial; in fact, understanding is a secondary matter, that usually comes after the attention has been engaged long enough. The great thing is that the subject of examination should make a well-focussed impression upon the mind, and that during the time it is being examined every other thing should be excluded. Whatever mental energy we have at our disposal must be devoted to this thing and to nothing else. And

as soon as these conditions are not fulfilled, if we allow too wide a scope to impressions, and if more than one picture prints itself upon our mind at one time, then the definition is not carried out, and our faculty of attention is only partly developed.

These mental pictures are what we mean when we speak of noticing things. Nothing could seem commoner than this, because we think we are noticing all sorts of things the greater part of our waking hours. As a matter of hard fact, we see and recognize fewer things by far than we have any idea of. You can see the truth of this by watching young children describe any familiar object. For instance, go to a kindergarten, put a dog or a bird or any similar thing before the little pupils, ask them to enumerate all the parts they see; and you will be surprised at their meagre answers. If then you point out the various characteristics, they will quickly see them, and in all likelihood will in any future trials see them. But if they were left to themselves, they would need a great deal of time and much effort to become acquainted with the main and most obvious features. The younger the child, the less is his

ability to observe; and this is the reason why a baby whose mother remains indoors most of the time will not recognize her when she puts on a bonnet. As the baby grows, his capacity for noticing things grows likewise. But the increase is a slow one unless it is skilfully developed. What is more, the development which he commonly receives is not a very broad one; and consequently his power of attention is one-sided. There are certain things only that he will notice, and when they are not present he will fall into fits of abstraction, his eyes will be dull, his lips will hang loosely, his muscles will be relaxed. To an appreciable extent his attitude will resemble that of animals that are not controlled by some active impulse.

But there are certain things, as I said above, that attract and hold his attention. And these things are always the interesting things. It makes very little difference whether they are big or little, good or bad, profitable or unprofitable. On account of his age, his surroundings, and his experience these things appeal strongly to him, they interest him. In the ordinary years of childhood, while he is finding out what the world is and

what the common conditions of life are, he is attracted by the use of his senses and the objects upon which they are employed. Therefore this is the limit of his attention. Food and play and animals and noise and excitement are the attractions for him ; he is not concerned with higher or more permanent things, because he has not arrived at the stage where he can use them. He does not realize the advantage of an education, and therefore school is tiresome. But he comes to like it if by companionship or emulation or games or the society of other children the big facts of his little life are associated with it. His interest is ever ready to wake up if there is a means forthcoming that can rouse it. He may grow stupid or mischievous over a monotonous recitation, may be so inattentive to what is said that he is oblivious to it ; but let the teacher begin to tell an amusing story, and immediately by some strange recognition of the interesting thing his attention wakes up, and he enters heartily into the fun.

As he grows older, new instincts and needs develop ; he has a larger life and a wider outlook upon the world. Consequently more things and different things interest him, and therefore they

fix his attention. He begins to think of sports, his instinct of constructiveness impels him to build things, his curiosity and love of adventure lead him to read books; and if he is rightly directed, his tastes for the better part of these activities will develop. Soon he is thinking of going to college or entering some form of business. And before long, when the sexual instinct begins to bud out, he will find himself attracted to his girl friends, and may even fall in love. All these things belong to the natural growth of his body and mind, and they are inevitable. Therefore they interest him keenly, and naturally his attention turns to them. He surprises his family by his acquaintance with baseball scores and the names of players, he steals away to read of hunting and battle, he wants to be with a certain girl as much as possible. It is no effort to think of these subjects, and he really would have much difficulty in preventing his attention from turning to them. They fill his mind's eye as completely as, a few years later, it will be filled with plans and thoughts of business, of renting or buying a house, of marriage and the care of children, of politics and the schemes of ambition. From

time to time, as he grows in one direction or another, his faculty of attention follows as automatically as the weather-vane follows and indicates all changes in the wind.

Now there are certain plain facts about this faculty of attention that every one of you ought to know. In the first place, you must recognize that your power of concentration is limited in its duration. No one can keep up the strain for more than a very short time; and if you attempt to prolong it in one stretch beyond the normal limits, you get bad instead of good results. It resembles very much the way the muscles act: any prolonged and uninterrupted contraction makes them weak or quite powerless. Try to look at an object without changing the position of your eyes, and you soon will find yourself getting a headache or falling asleep. The latter thing is very probably what happened to the holy monks of Mount Athos, who doubtless dreamed and thus saw beautiful visions. But if you look and move your eyes even a little, then look again, and again move them, you will be able to examine the object indefinitely. Have you ever watched a team of athletes pull in a tug of war? The men give a

mighty pull all together, and the last man, or "anchor," wraps the slack of the rope about his waist to hold it. This gives the other men the opportunity to relax for a few seconds, after which they heave again on the rope. They know by experience that one steady, long-drawn pull would soon melt away into nothing, but that repeated efforts with short intervals between them will give the best results.

That is exactly what happens if the mind attempts to hold itself to one aspect of a thing too long. At first the idea may be grasped more or less thoroughly, but if no change at all is made, we get no farther along than when we began. On the contrary, if we take up another aspect of the case, we can consider it well for another short period. And so we must continue, changing our point of view periodically, seeing the problem from as many sides as possible. Of course, we may make the round of them, and so get back to the first, which will then have the freshness of a new view. It is by ignorance or neglect of this truth that many persons complain of thinking about a thing until they are tired and con-

fused. The truth is that they have been looking at one or a few aspects of a thing; they have put themselves in the same position as the badly instructed tug-of-war crew that endeavored to pull without intermission, and were dragged off the cleats for their pains. This method of constant change is a thoroughly fine one; for not only does it keep our minds fresh, but also it helps to unveil new and hitherto unthought-of aspects. Each view, being well considered, and then put aside, freshens us for the next one; and my usual experience is that it leads us on to make trials and discover relations which otherwise would remain hidden.

Unfortunately many persons, who, by the way, are for the most part unsuccessful, never get as far as that. They think of a thing, and then it fades away. They believe that they have seen all that there is to see, and take up something else, or they do nothing. They never can make much progress, for they are absolutely unable to do thorough work. They may have good natural abilities, which, after all, does not necessarily amount to much. An able judge once said to me that brains were the cheapest commodity he

knew of. Mere brains, mere ability, are common — as common as air, or water, or any number of good things that are too plentiful to attract much consideration. But a well-organized method of using what brains we have is a very rare and a very precious thing. That often constitutes the difference between the successful man and the men whose "work gets done in the interval of their mind-wandering."

You can see how thoroughly worthless such thinking must be if you consider some examples of the big men's methods. They examine their subjects so thoroughly, they make them develop so wonderfully before their eyes, that often they are liable to lose cognizance of everything else, even although it may be startling. Archimedes of Syracuse was said to be so absorbed by his attention to the study of geometry that the first information which he had of the storming of the city came when he received a mortal wound; and when the Roman soldiers broke into the house, his first words were, "Don't disturb my circles!" Newton's power of attention was so profound, it attacked the subject from so many sides, that in solving

difficult geometrical problems it was not necessary for him to write out each step laboriously, but almost as soon as he saw the beginning, he knew what the end must be. And during these interesting experiences he became so absorbed that he would forget the passage of time or even the necessity of eating.

Everybody knows how thoroughly a marked effort of attention can make us forgetful of all other things. Of course, it must inevitably be so; for we have only a limited quantity of energy to use, and when that is quite taken up by one matter, others must withdraw. I have seen this fact exemplified many times. A short while ago an able surgeon of my acquaintance was suffering intensely from toothache. In the middle of the night he was unexpectedly called upon to do a difficult emergency operation, the result of which meant life or death to the patient. At first, on account of the great pain, he could barely control his hands and legs and eyes, and for a few minutes he experienced the agony of feeling that he would prove incompetent. Then by a great effort he launched himself into his work, his mind became taken up with its many

aspects as they unrolled themselves before him, and shortly he was so interested in what he was doing that he forgot completely that he had a tooth at all. And only after the whole operation was complete and the patient well disposed of did he feel a return of the pain.

It is on a similar plan that people become absent-minded. Usually they are men who are intensely interested in some object of thought or speculation; rather than some practical, bustling matter of active business. The college professor, the speculative philosopher, the writer, are types of men who easily contract such a habit. They "chew the cud of reflection," they go over the interesting subject again and again, and the details evolve themselves as the lines and figures of a negative swim into view when it is immersed in the developing fluid. If the subject were not interesting, no progress would be made; they would fall into the condition of the monks of Mount Athos when they contemplate their abdominal centre, or they would act as people do who must sit through a prosy sermon. But things are quite different with them: they have a subject that attracts them mightily, they become absorbed in it, and conse-

quently have little attention for commonplace matters. While in this condition they go through their ordinary acts by routine, by habit and association, and very often their acts do not dovetail. At such a time a man will carefully search his room for the spectacles that are on his nose, he will mislay his keys, put on wrong clothes, he may speak to one person with the words and manner intended for another; and I know even of a man who under such circumstances forgot the date and hour of his own marriage. There is a never-ending supply of amusing stories about this state, such as the one of the college professor who rang his own door-bell, asked the newly arrived maid whether he himself was at home, and on receiving a negative reply went away in disappointment. Anecdotes like these seem exaggerated, but they really are quite possible both theoretically and practically.

The great truth of the matter is that we cannot attend to more than one thing at a time, and all seemingly successful efforts in the contrary direction mean no more than divided attention. The possibilities of distributing the attention over more than one thing have been much overrated; and

unfortunately there is a common and fallacious belief that such a division is the sign of a powerful mind. Thus, Julius Cæsar is said to have shown his intellectual might by dictating four letters while he wrote a fifth; and similar stories have been told about Napoleon. Furthermore, examples of expert chess players, who, having their eyes bandaged, can simultaneously play ten or fifteen games of chess with as many different opponents, are constantly cited to show what wonderful feats these unusual persons can accomplish in seeming violation of a fundamental law.

As a matter of cold fact, both of these feats prove nothing at all about the matter in hand. Cæsar and Napoleon, when they dictated several letters simultaneously, had to put up with secretaries who wrote slowly in long hand, who therefore were quite unable to transcribe the words as quickly as they were spoken. Therefore, while one secretary was writing a phrase or sentence, another was set to work, and so on. If these great commanders were living to-day, an expert stenographer would make the feat impossible by taking the dictation as fast as they could speak. What these historic examples amount to is no

more than a rapid oscillation of attention from one subject to another, a quick change of the interesting point. And the case of the expert chess player may be as easily explained. The player on starting a game has in his mind's eye the picture of a chess-board with the chessmen in their proper order. As each move is called out, the picture is altered to suit the case, and is likewise remembered. And this process of forming new pictures and remembering them may be repeated for a remarkable number of times. There is nothing else in the problem than this faculty of image forming and image remembering. And, notably enough, most expert chess players prove this by being able to give their successful attention to the one subject of chess, and to nothing else.

There is a further result that well-developed attention accomplishes, and that is the growth of memory. Later on, when we come to consider the meaning of remembering, we shall see how the gist of the whole process lies in the concentration of the act of looking at things and attending to them. We can in this way understand how we come to remember with ease the things that are interesting, and to forget with

equal or greater ease the things that are distasteful. This is how we come to have so much difficulty in grasping and holding the beginnings or principles of a subject; for then we have not gotten into it, the matter is not attractive. But once let the start be well made, let us fairly see the beauties and advantages of it, and immediately we learn additional facts concerning it with astonishing ease. Not only do we then comprehend it more intensely, but also more clearly; and this distinction we must be careful to make. Intensity is not necessarily an advantage. It may be characterized by a blind force, an unreasoning passion, that takes no notice of what it does. It is apt to resemble a boy who runs around and around in a circle until he becomes dizzy and falls to the ground. But when the enthusiasm is marked by enough deliberation and self-control to steady it and make the mental pictures clear, its results are quite different, for they then have all the marks of reasonable action.

Edmund Burke, England's great orator, in writing a letter of advice to his son, once said: "Reading and much reading is good. But the

power of diversifying the matter infinitely in your own mind, and of applying it to every occasion that arises, is far better." This is simply a fine and explicit way of advising the cultivation of attention. Reading by itself is not enough, nor is travel, nor is study. We must go about the matter understandingly, leaving as little as possible to chance, depending as little as possible on the aid of others, honestly endeavoring to make as much of each subject as it well can give us. That is the way to acquire thoroughness, the quality which serves as the oak for other successful habits to twine about. That is what the world is looking for, and that is what it is glad to pay much for. Simple understanding is as nothing; it means no more in mental ways than simple strength of muscle means in physical. And there is no greater drug in the market than plain, unskilled strength. But when that strength has been finely trained, when it can handle a tool well or perform a useful act of precision and skill, it immediately becomes desirable. There is no doubt that this truth applies as well to the resources of the mind as of the body.

The main use of all this lies in the way you can apply it to your own lives and careers. It is not necessary to wait until you are adults and engaged in business. Indeed, you ought to form your methods of attention long before that. When you are growing boys and girls you can begin much better than in later years. The great thing is to realize that nothing is in itself necessarily hard or disagreeable; your idea of it is the crucial fact, and that idea or conception you can do much to mould. I remember very well the case of a boy whom I tutored many years ago. His parents said that he was entirely unable to learn mathematics, that anything connected with the subject seemed to stupefy him, and therefore they wanted him to receive private instruction in order to have a sufficient elementary knowledge drummed into him. Strangely enough, after the study was brought into connection with various agreeable matters, when its practical applications were demonstrated in many different ways that touched the boy's pleasures and games, he began to lose his fear of it; then he went at it in the ordinary straightforward fashion in which he did his other les-

sons, and finally he became fond enough of it to want to take the advanced courses.

Every one of you can do the same thing, and it makes very little difference what the subject may be. But you must get your method right; you must not reserve it for this or that important piece of work. You must use it wherever you can, in work, in play, in making fishing flies, in preparing for an examination, in courting a sweetheart, in reading a book. In a certain way it might be resolved into the idea of being eternally careful and watchful, of taking note of everything. The boy who in playing a game of football thinks the matter out before the game begins, who looks at the possibilities of the game from every standpoint, who revolves it in his mind in regard to every chance of offence and defence, who studies the dispositions of his players in order to increase their strong and decrease their weak sides, is the one whose team will win. He cannot avoid being put at the head of his team's affairs, for his methods are the successful ones. The youth in college who is not satisfied with doing his work in a perfunctory way, with mere mechani-

cal excellence, who endeavors to see each subject from as many aspects as possible, who turns it over and over in his mind, who refuses to be stupidly bound by a routine method, he is the one who is highly thought of, who is picked when an advantageous place is to be filled.

With all this thoroughness there is no good reason to be narrow. This is an age of specialization, whose tendency every one must feel. A man is commonly trained to sell one commodity or a part of it, to make one thing only or merely a part of that thing, to study one subject only or even a subdivision of it. The merchant wants a salesman who will sell nothing but ribbons; the boot manufacturer hires lastmen or sewers or peggers; the law firm advertises for a corporation assistant or a real estate assistant. These are examples of the universal need for special skill, for men who have a specially educated attention in one direction. The tendency is good enough in itself, unless the man is satisfied to answer the need in the one direction of his special business and nothing else. But there is no reason why he must stop there. He is more than a salesman,

or a lastman, or a real estate assistant; before and after everything else he is a *man*. The method should be applied to the whole range of his conscious life. Whatever he does must be done in the same manner. It is much as if a traveller climbed a mountain to get a fine view of a certain lake. There is no good reason why from the same altitude he should not obtain a view of every other feature within the bounds of the horizon.

The conclusion that you must draw from all this is obvious: you must try to get as much normal experience as possible, to visit as many places, see as many sorts of people, read as many good books, have as many favorable sensations, as you reasonably and comfortably can. And whatever you attempt must be carried out with as much fidelity as you possibly can master. You must refuse to be held down to any hard and fast view, but must insist upon the intellectual necessity of continual examination. As your stomach ceaselessly turns its food over and about until digestion is completed, so your mind must revolve in the same tireless way the things that it seeks to master. The

more thoroughly you can control the mental process according to a logical and ordered system, the better must its results surely be. This is the lesson of attention, and at the same time it is the lesson of life.

CHAPTER IV

What Association Means

The bond between attention and association is a very close one. Indeed, the one merges so easily into the other, that we could, if it were desirable, speak of them together. In the first case we had to do with separate and definite impressions which were made upon the brain, and the necessity of making those impressions as clear-cut and as emphatic as possible. In the second, there is a further step of combining separate impressions, so that there may be a well-marked line of connection, by which the various factors are thrown into one group. In the first instance we were dealing with units; in the second the units are clustered into multiples.

Now this line of connection is the gist of this chapter; and it is a matter of great interest and great importance. It concerns both the big

and the little manifestations of our mental lives. It is so pervasive that few processes of our minds are quite free from its influence. Its effects are commonly not recognized at the time of their occurrence; but they are present and active none the less. The ordinary conversation is guided in all its twistings and turnings by association; our likes and dislikes in regard to matters of sense impressions depend upon association to a great degree; our prejudices and opinions are, much more than we commonly recognize, the product of association. In short, the more we examine the subject, the farther do we find that its ramifications extend.

In "The Autocrat of the Breakfast Table" an amusing story is told that beautifully illustrates one of the commonest aspects of association. "A certain lecturer, after performing in an inland town, where dwells a *Littératrice* of note, was invited to meet her and others over the social tea-cup. She pleasantly referred to his many wanderings in his new occupation. 'Yes,' he replied, 'I am like the Huma, the bird that never lights, being always in the cars, as he is always on the wing.'—Years elapsed. The lecturer visited the

same place once more for the same purpose. Another social cup after the lecture, and a second meeting with the distinguished lady. 'You are constantly going from place to place,' she said. — 'Yes,' he answered, 'I am like the Huma,' — and the sentence was finished as before." Then the author goes on to state the lecturer's confusion at the thought of the stupidly literal repetition. "Yet it was not true, as the lady might have fairly inferred, that he had embellished his conversation with the Huma daily during that whole interval of years. On the contrary, he had never once thought of the odious fowl until the recurrence of precisely the same circumstances brought up precisely the same idea. He ought to have been proud of the accuracy of his mental adjustments."

This process is an exceedingly common one; indeed, most of our thinking takes place in this form. It is one of the readiest means by which we come at results whether weighty or trivial. And even if we know nothing about the theory of it, nevertheless we are constantly using it in a very practical fashion. Every time we use the commonest objects of ordinary life, our ability to

employ them advantageously depends upon the faculty of association. Thus, the idea of a knife brings to mind a crowd of impressions. It is sharp, hard, cool, heavy, springy, opaque, it may be corroded by exposure, or broken by violence. Each of these attributes is bound up with trains of experience which give the clew to the right and wrong method of using the instrument. The sharpness has been demonstrated by the cutting of wood, of fruit, of one's fingers and clothes; this single attribute has had a wealth of illustrations which are connected with an indefinite number of other experiences both simple and complex. The heaviness has its own set of impressions and experiences, such as the breaking of pottery, the injury of one's body, the creasing of paper and fabrics. Here again there is a little world of facts, each of which not only has given additional information about the knife, but also has brought up the characteristic qualities of numberless other things. And in similar ways each attribute has added much to our stock of knowledge and our ability to live our lives profitably.

What takes place with so simple a thing as a

knife occurs as surely with more complex things. The process of ascertaining the nature of steel is very much the same as learning the nature of society, or ship-building, or electricity. And no matter what the experiences may be, they must leave some impression in the brain. You may think of this as a path, if you will, or as a certain set of vibrations ; but at all events these paths exist in some physical way. There is a large area of the brain that is devoted to them, and their importance cannot be overestimated. Here is a locality, between and around the various centres, that acts as a means of communication between them, makes or breaks connections between them with inconceivable rapidity, acts as a sort of clearing-house for the balancing of experiences. Without such a medium of exchange the various centres would be forever separate, all things would be known from their separate aspects, there would be a reign of eternal flatness. The scent of the rose would be recognized, but would have no relationship at all to the color and form of the flower. You would recognize the shape of your sister's face, but your recognition of her intellectual and spiritual qualities would be as far

apart as if in another world. Under such circumstances our knowledge of the knife that was mentioned above would be an entirely different thing from what it now is. Each experience would stand quite alone: the knife is a cutting instrument; the knife is a heavy object; the knife is subject to corrosion, and so on. Each aspect of the knife would stand entirely apart from every other one, as if they belonged to different things, and as if they could never be combined.

By means of association the mind brings together and assorts the experiences and impulses of every day, throws out the wasteful repetitions, and obtains the desired final result in the quickest, surest manner. It serves the mind as the modern idea of a trust serves the business world. The trust is a sort of regulator, it abolishes unnecessary and reduplicated services, it gives the shortest cut between the two ends of commercial transactions. Mentally, association does the same work. It combines the various impressions about a knife, that it is hard, that it is sharp, that it may corrode, that it is heavy, and so on, and centres them all about the conception of *knife*.

Therefore when we think of the instrument, all its qualities are instantaneously brought into a state for practical use. That is how we make easy transitions from one subject to another, and that is how in the process of ordinary thinking we advance from one step to another. Thus in the story of the Huma there was a little path in the lecturer's mind about the bird's disposition ever to be on the wing; there was another path concerning his own continuous travels; and when the two subjects were brought together, the mind's action slipped from one to the other, it combined them, it made them one in the form of the comparison.

Likewise, if we multiply this example of association, we are able to see how the same principle works itself out in a prolonged conversation. There is very little difference between this and the higher forms of mental activity. Usually, however, we are not sufficiently self-conscious or analytical to be able to see all the separate steps. But when we do, we recognize at one glance a large principle of intellectual activity. Wagner was best able to compose his operas when he constructed such associative circumstances as would

direct his energy in the desired channel. And therefore he used to clothe himself, select his room, and arrange the furniture, according to the piece of work in hand. "Tristan" required a certain environment, "Siegfried" demanded quite another. All these petty outward aids helped him to skip over the multitude of impressions and ideas which surround every one, and to arrive at the desired conception in the quickest and easiest way.

This faculty of skipping over irrelevant things is one of the main characteristics of association. And very fortunately it is not a conscious process. If it were conscious, a large part of its value would fade away; for then we should be so much taken up with the workings of our minds that we should have no time left for the final and necessary results. As a matter of fact, the more direct we can get the process to be, the more useful does it necessarily become. Association is a sort of express train that makes a very rapid run between terminals and totally ignores "local stops." The experienced mind jumps over unnecessary steps, it saves itself the energy required to go from one connection to another, and with one great sweep it comes to

the desired end. It is somewhat on the plan of the skilled mathematician, who knows his formulas so well that he is able to omit the consideration of each stage in solving an equation, and on sight of the first one knows exactly what the final one must be.

On the other hand, the stupid, the ignorant, or the prolix person flounders through one slow stage after another, wearying his auditor, wearying himself perhaps, and even possibly losing himself in the numberless details which the statement of each step may call up. He starts telling a story, he is unable to grasp the important line of narrative which should bring him surely and rapidly to the climax. Instead of that, he wanders slowly and ponderously through all imaginable byways and crooked paths from one unimportant detail to another. His account is filled with "says he" and "says I," with observations and statements that are far from the mark. The listener may know nothing about the working of the mind; but he does know that the speaker is eternally wearisome, and that the ending of the stupid speech would bring much consolation with it. Such a method of narrative has little reliabil-

ity to it, and clearly shows what good association would have done for it. On the surface it appears to be all accuracy, for it aims to reproduce to the minutest details all the smallest characteristics of the original circumstances. As a matter of fact, its very looseness of structure entails danger of deficient integrity. There is no balance, no nice weighing of comparative values. There is, on the other hand, every opportunity for error, for the interference of personal bias, for the interaction of foreign considerations, each one of which has its little crowd of associative memories. Instead of being like an express train, this method of thought resembles the progress of a hand-car that cumberously works its way along a track which is broken at short intervals by open switches. Instead of being like the trunk of a straight tree, it may be compared to the tangled roots which divide and subdivide, leading nowhere in particular, being under no more than chance control.

Let us take another instance of association, one that will show another side of this faculty. Have you ever noticed how you act when you are preparing to go to bed? You enter the bedroom,

sit on a chair or on the bed and always in one sort of posture, you take off one garment after the other always in the same order, you unlace one shoe after the other always with the same motions, you clean your teeth and bathe yourself always employing the same routine of movements; and so you proceed until you are comfortably lying in bed. You do not think of the order of undressing, nor do you devote any attention to the separate articles of clothing, their relations to one another or their functions. You have been accustomed at a certain time each evening to go to a certain room and perform a certain series of acts. You have developed a strong set of associative bonds between the time, the house, and the other circumstances of home life. All that then happens is the setting in motion of a train of movements; and whether you are fully awake or half asleep, whether you are thinking of the business of the moment or of some bit of play, the sequence develops with machine-like regularity. One act and movement suggests another, the third follows the second in the same automatic way, so that at the end of the process, and without any conscious effort, you are fully undressed.

Now you are apt to lean back in your chair and say that all this is a sort of habit. And your remark would be very near the truth. For suggestion has many characteristics in common with habits, or I might say that "nerve habits" are the basis of association. A freshly made set of associations is easily remembered, and the same is true of habits. For in both the set of impressions is so recent that there has been no opportunity to interfere with them. It is very much like a track through newly fallen snow; there is no mixing of footprints, and no chance for confusion. In association the element of intensity or vividness is a very active one. The intensity of your impression at the dentist's is enough to create a set of associations very quickly and thoroughly. The same factor is at work in habit formation. The element of fitness is worth taking into account in forming associations; for our mood or frame of mind renders easy the formation of associations of a similar nature. Thus, for instance, when we are joyful, we readily form happy associations which may last for a long time through good and bad fortune. And a similar factor is act-

ive in developing habits. We may say that habit is a purely individual thing, it concerns each separate person, it is his easiest and simplest way of getting things done. Association concerns itself with sets of circumstances in which the individual is a part, but no more than a part.

Habit and association have their points of unlikeness as well as likeness. A habit is set in motion by one definite thing which always acts in a direct fashion. But association may arise not only by similarity but also by dissimilarity. It is quite easy to see how things are associated by similarity, because there is a common quality that makes the transition from one to another easy and natural. It is somewhat as if we were looking at an island that was joined to the mainland by a bridge. The two have been made one, and to all intents and purposes they are one. Now, when in certain circumstances we expect some sort of sameness or oneness, and find the direct opposite, the fact comes to us with a degree of shock. Naturally then we think of the missing thing, and so our train of association is constructed. As I write this I find myself thinking of a litter of puppies

that I recently saw. One of the puppies had four white paws, and another had four black. The thought of the first always suggests that of the second; and when I think of the remaining pups, I find that it is only in connection with this association by contrast. Examples that are as good as this, or better than this, may be seen every day. If we know two sisters, one of whom is beautiful and the other homely, the mention of the first one's characteristics always brings up those of the other. If a clergyman has a wicked son, the statement of the son's worthlessness always provokes a statement of the father's worthiness. It is somewhat on the plan that a strongly marked color always accentuates a contrasting hue.

Now let us see how all this applies to our everyday lives. Did you ever stop to think that a large part of our lives is shaped by association and nothing else? We are apt to say that the two things which make us what we are, physically and mentally, are heredity and environment. Heredity means descent, environment really means little more than association. Nothing that I know of is more commonly misunder-

stood than heredity. It is supposed to cover all our traits, our likings, our prejudices. It is usually made to account not only for our bodies, but also for our way of using them. If a man has a very large nose, people explain its size by saying that his father had a similar nose. And if he is virtuous or industrious or reckless or without sufficient self-control, they immediately look for a similar cause. The matter is not as easily settled as all that. We are not only the products of our parents, but also of all our past ancestors, individually and collectively. We have characteristics that come down from progenitors who are many generations away, who are entirely unknown to us, who would not be recognized if we could see them. They have been of all sorts, they or their ancestors came from many different lands, they represented various degrees and kinds of civilization. That is the reason why in every people we find no really strict conformity to a certain clear-cut type. The dark-skinned Italians have many examples of blondes among them, who are in part the descendants of the Teuton invaders of centuries ago. In the more

northern part of Europe to-day the really pure type of Teuton is comparatively rare, for during the past generations the mixture of peoples has been so great that sharp lines of demarkation have been lost.

Thus we may go through the various nations, and careful examination will show that they are confusingly mixed. Such a thing as a really pure strain cannot be found. And each person represents in some degree an indefinite number of elements. Moreover, it has been shown conclusively enough that heredity concerns itself with nothing more than physical characteristics. And, therefore, when we put heredity in its proper place, we must acknowledge its control over our bodies only; and even then, we must recognize that that control is derived from many sources, almost all of which are entirely outside of our knowledge and acquaintance. There is no family that can boast of more than a fractional part of the straightness of descent that belongs to animals. For in them the various types are fairly constant, certain groups live in certain places, to a large extent they have been unable to avoid purity of breed.

The factor that then remains is environment, and this, we shall see, is the element that guides and forms the greatest parts of our lives. What we call personal influence, social environment, family training, education, all come under this head. Likewise you might say that environment includes the whole of our civilized life. The child comes into the world in the form of undeveloped possibilities; and the factor that crystallizes those possibilities into actualities is the environment in which he grows up, the associations which he forms. That is the thing which is responsible for much of his future life. As a rule his acts and even his thoughts ought not to be regarded as his very own product, for which he alone is responsible. He lives one sort of life or another according to the atmosphere in which he grows up, and the older he grows the more is he fixed in the mould that his surroundings have prescribed.

This accounts for the differences in various families, in various classes, in various peoples. One child grows up among crude, untutored persons, whose language and power of expression are bad, whose ambitions are small, whose

view of the world is narrow. He learns the same language, and if he remains for a sufficient time in his environment his speech will forever afterward bear the taint. His ambition, so long as he feels no outside influence, will be limited by the standards which his daily life sets before him. His attitude toward the world will be little more than the reflection of his family's light. Contrast with him a child who is brought up under favorable auspices. His pronunciation and vocabulary are such as educated people use, his bearing is graceful and courteous, his ambition is as large as the trained experience of his relatives and friends allows it to be. The difference between the two children must necessarily be most marked. They cannot possibly grow up to be alike, to be equal. In this sense equality does not exist, and the only way it can exist is in an even likeness of theoretical opportunities.

Very possibly at this place you are apt to ask why everybody should not be good or bad according to the goodness or badness of his family; why good fathers should have bad sons, and bad fathers good sons. The answer is very

simple and direct. No family is entirely good or entirely bad. You cannot find any group of people who have a monopoly of virtue or of vice. Moreover, parents cannot possibly control all the influences that touch their children and are bound to affect them. A man may be a good citizen, and may win the approbation of the community in which he lives, and yet not be a wise father. A humble workman or artisan, although unsuccessful in a worldly way, may give to his child a heritage of strength of body and mind. And outside of these influences there is the effect of companions, of acquaintances, of teachers, of neighbors, of the community at large. These factors are at work all the time, they are of various sorts; and in the mind of the growing boy or girl they struggle for existence in the same way that roots and plants in the forest fight for possession of the ground on which they grow.

There is a time when this struggle becomes most acute, when the warring factions are aided on one side or the other by the attentions and wishes of the person himself. This time is in youth and early manhood and womanhood, when

the character is not absolutely set, and the personal resolves are beginning to work themselves into a position of mastery. Now is the time for forming profitable trains of associations. Their appearance will have the effect of fresh troops on a battlefield where the opponents have maintained an exhausting but equal fight. These associations can be formed consciously by the youth in the same way that the child forms them unconsciously. And possibly they may have all the greater force on account of their being consciously selected and directed.

Everybody knows the influence of companions; their effect is so well understood that a man is commonly estimated by the company he keeps. That is only one form of association, but it is an important one. Your friends make an atmosphere for you which clings to you even after they have departed. In addition, they set a standard by which the rest of your world may judge you, by which you may judge yourself. Even more can you form profitable or unprofitable associations through your most intimate companion, your chum; for he represents the type that appeals strongly to you, he is an evi-

dence of your taste in humanity. Remember Lord Chesterfield's advice, "Choose the company of your superiors, whenever you can have it." Your clothes make another set of associations, for the man who is dressed neatly and suitably feels more worthy of respect than if he wears untidy and soiled garments. In much the same way your posture, the way you carry your head and shoulders, gives a set of associations. Steadiness and poise of body have unquestionably an influence in inducing steadiness and poise of mind. Instinctively, we believe so much in the association of external manner and inward characteristics that we unhesitatingly distrust a person with a shifty, cringing demeanor. Manliness, straightforwardness, fair dealing, these qualities are as capable of being cultivated as politeness and gentle bearing.

The books you read are a potent factor in translating you to a world of higher thoughts and better acts. A trashy book means much more than something that is not good, it really stands for viciousness of taste and inclination. The gulf between it and a really good book is almost too much to be measured. Worthy books rep-

resent the noble works of noble minds, and every time we come in contact with them we must inevitably feel their influence and move in unison with them. Their thoughts become our thoughts, their words fall into our vocabulary, their atmosphere blends with ours. As soon as they take us out of ourselves, they put us in companionship with the best parts of human nature the world over. "They are the voices of the distant and the dead, and make us heirs of the spiritual life of past ages."

The finest help to the formation of good associations is, after all, our own ideals. Our tendency toward real worth of character may be accurately measured by those limits which seem to us deserving of emulation and imitation. We cannot get beyond that mark; but if we grow strong enough to approach it, we have a wider range of vision (as when we climb a mountain), and straightway our goal is set miles away. Then the healthy mind travels on again, until further progress gives a broader scope and higher ideals.

Therefore resolve within yourself to think clean thoughts, to do honest work, to see the

good that lies in others. The resolve itself is the first step toward the accomplishment, and every step means added links in the chain of associations. That chain is the means of drawing out our best possibilities. The plan is a thoroughly practical one that requires a small but continuous investment of thoughts and acts, and gives a large income of happiness and content. This is the real way in which every one may be self-made ; and what is thus accomplished is far more valuable than the wealth which is the commonly accepted attribute of the conventional self-made man. Whether or not you acquire great sums of money, you can surely amass stores of mental and moral strength that are too valuable to be reckoned in terms of monetary value. And all this you can do by the potent agency of well constructed association.

CHAPTER V

The Uses of Instinct

By this time you know that association consists of an artificial set of circumstances which vary one way or another, according to your situation in life. Now, after the manner of association by dissimilarity, we are going to consider purely congenital traits, characteristics that exist in us at birth. It is not hard to find illustrations of what I mean, for they are all about us. Thus, you have doubtless noticed how unable you are to avoid closing the eyes when an object suddenly passes near them. You may be quite convinced that the object is not going to touch you; but, nevertheless, you cannot help blinking. That is what is called a reflex act, an automatic response to an impression made upon a sense organ. It has all the characteristics of an instinct. Let us take another example: the spider weaves a silken bag for her

eggs, and by this means carries them always with her. If they are taken from her, she is disturbed and forlorn; but happiness returns when they are restored, or she is made equally happy if some other spider's eggs are given to her. That is the maternal instinct. We may see the same force in human beings: if two women bear children about the same time, as frequently happens in maternity hospitals, and the children, before their respective mothers come to know them, are changed, each woman presses the infant to her breast with a beautiful fervor, and pours out her heart in the most touching expression of love and devotion.

There is a wasp (Ammophila) that builds a cell, places in it her young, and at the same time encloses a certain comparatively large caterpillar for food. If the caterpillar were alive and uninjured, it would struggle enough to make its way out or hurt the egg; if it were dead, it would soon decompose and be unfit for food. Therefore, the wasp stings it first between the head and first section of the body, and then between the other sections, making nine stabs in all. As a result, the caterpillar is paralyzed,

not killed. It provides a steady supply of fresh food for the immature wasp, which consequently thrives in safety. This device to a person not familiar with animals would naturally seem wonderful, it might even be taken to denote a very high order of intelligence. Naturalists regard it differently; they put the question of conscious choice and action to one side, and call the process instinct. Again, an African traveller (Thunberg) states that a hippopotamus calf, whose mother was shot while giving birth to her young, had the instinct of flight so highly developed that it was able to escape from the party of hunters who vigorously endeavored to capture it. One would never think of claiming that the hippopotamus reasoned the matter out; one stops all discussion by saying that the beast acted according to instinct. And many authorities have dwelt upon the instinctive and congenital fear of wild ducks that are hatched by a domestic duck in the same nest with her own fearless young.

All these things seem remarkable because we commonly think of carefully adapted means as dependent upon reasoning, upon a conscious

knowledge of surrounding conditions. And since the ordinary conception of animals and birds forbids us attributing to them conscious calculation and applications of memory and reason, such examples seem departures from the simple acts that naturally belong to low mental conditions. But as a matter of fact, we know that exceedingly low organisms are capable of complex acts, of exercising a faculty of choice, of showing definite initiative. Thus, the white cells in the human circulation, in the face of an invasion of micro-organisms of disease, marshal themselves in attacking columns, and strive to wage a war of extermination against the invaders. This fact, considering the low organism of leucocytes, is as wonderful as anything we can imagine. So low a form of vegetable life as ordinary pathological bacteria are said by good authority to show fear. Here again is a remarkable thing, fully as remarkable as any instance of instinct that we know. In short, all through nature we find unlimited examples of reactions to environment that denote an eminent ability to cope with obstacles, and a fitness that signifies a high degree of evolutionary development.

These ways of behavior are what we call instincts. They may be very simple or very complex; they may be of seemingly slight interest or absolutely necessary to the preservation of life. But no matter how they may be classed, they regularly have certain characteristics: they always occur in all the members of a species or group that live in any one kind of environment; they always consist of certain well-defined trains of activities which are brought into being by certain appropriate reasons; and they all are actually or remotely necessary to the prosperity or existence of the species. There is no such thing as a useless instinct, although we sometimes find one whose usefulness belongs to the past rather than the present. Just as in the human body we speak of the vermiform appendix as a remnant structure — one which had its uses in past times when the body and its surroundings were different from what they now are — so we may have a remnant instinct. The habit of a thing may last long after the reason for its existence has disappeared. But there must have been some good reason for it in the beginning.

These traits have developed as definite reactions to certain originating factors. Far, far back in the dimly remote history of animal life, some individual acted in a certain way when confronted by any given set of circumstances in ordinary life. Without knowing anything of the why and wherefore, he found that his course was advantageous, and as a result he thrived better than his fellows, he obtained more of the valuable things of life. His particular formation and manner of reaction were handed on in the course of heredity to his offspring in greater or less degree. Those who obtained the trait flourished as their parent did, while those less bountifully endowed declined. This process of selection would necessarily go on for countless generations, until all the species were marked with that special gift, that manner of reacting to the group of circumstances in question. There would be no question of choice, of thought, of weighing the pros and cons; there would be nothing more than a series of impressions upon sense organs, followed by certain characteristic results. When the series was started, act number one would give way to act number two, that

to number three, and so on. It is very much as if we have a series of automatic hammers, so constructed that a blow with the first causes the second to strike, and this in turn sets the third in action. Or we may compare it to some sort of wave impulse where one curve follows its predecessor in a perfectly inevitable and rhythmical fashion. The train of reflexes, once set in motion, goes on from reflex to reflex until the end has been accomplished.

The number of instincts is so very great, and the objects which they touch are so intimately connected with our welfare, that there are very few phenomena in both human and animal life which are not at some time colored more or less by this faculty. Nevertheless, in spite of their wide range, they may be grouped so as to show a certain amount of order. Most of them are purely egoistic, purely self-assertive in their origin; they seek to protect the individual and his characteristics to the farthest possible limits. It is somewhat as if the idea of self-preservation were symbolized by a fluid body which was constantly throwing out armlike processes in every conceivable direction, trying to multiply itself

indefinitely, endeavoring to cover all possible ground. The instinct of jealousy, of battle, of secretiveness, of acquisitiveness, of rivalry, of play, even of parental love, may with little effort be shown to have such a connection. And what is true of them is equally true of practically all others. Thus the jealous creature sees or imagines a point of superiority in a rival; and the wish to excel in that respect, the longing to make himself stronger or better endowed than his rival, is a larger way of stating the same impulse. The instinct of battle is so plainly the crushing of an opponent and the exalting of one's self that it needs no demonstration. Secretiveness and acquisitiveness, again, are other ways of increasing one's own power and sources of supply and ability to exist where others cannot. Rivalry simply means the desire to obtain and hold a coveted object that others want, the victory of one's self and the defeat of others, the longing to make one's self strong and lusty and to make others poor and lean. Play seems more remote; but after all it is no more so than many or all of the impulses just noted; it merely lacks the element of seriousness. It is a sort of practice

before the time of real action begins. The puppy bites and snaps and snarls in his play very much as he may later do in vicious earnestness. The difference is one of degree, scarcely of kind. Even parental love, that most unselfish of impulses, is in a way eminently egoistic. We do not love a baby with that fierce, undying love because he is helpless or because he may have a brilliant future or because we like to spend money for toys, bibs, nursing bottles, and similar necessities. We love him because he is bone of our bone, flesh of our flesh, because his flourishing is our flourishing, and his decline our decline. In a word, we love him because he is *our* baby.

Commonly we speak of instincts as traits which exist at birth. And this is true enough, actually or potentially. Nevertheless each instinct has its own time for appearing and disappearing; for the development and stability of the trait depend upon the use which it is meant to subserve. As soon as there is a need to be filled, an instinct appears to do the work. That is what nature has been about all these thousands and thousands of years. And as

soon as the want has been met, she takes away the useless chain of reflexes. As soon as a baby comes into the world, the instinctive act of sucking exists in full force. He cannot reason about it, and he has no manner of choosing what he is to suck. As soon as any object is placed between his lips, they close about it, the cheeks and tongue make a vacuum, and a wave of reflex impulses hurries whatever is squeezed into the mouth down into the stomach. But when he is big enough to run about, to chew solid food, and to feed himself, the sucking instinct passes away. This same child is born with instinctive traits that do not develop for years to come. The sexual impulse is the most noticeable of these, and appears only after the body has attained a fair amount of growth. Potentially the instinct was there from the beginning of the child's life; and only when the time of possible use matures does the faculty begin to assert itself.

There is another aspect of the case that is especially worthy of attention. The object of the whole arrangement of instinct is purely utilitarian, and the main end in view is the physical

improvement of the species. If the original circumstances change, so that the instinct no longer points directly to the desired goal, then the instinctive impulse must likewise be changed. Nature makes very little fuss and feathers about the matter: those creatures that are unable to recognize and conform to the altered environment die off, leaving the field to others that are more adaptable or better endowed. Again and again the same truth comes home to us: what is useful tends to perpetuate itself, what is useless tends to lose itself. Thus, winged creatures in their natural state have the instinct of flight very highly developed. But put them in confinement, where their wings are more or less superfluous, and gradually the flying instinct fades away. The wild duck flies freely, and prefers using his wings to his legs for escape. But in the domesticated duck the reverse is the rule. The silk-moth not only has lost much of the flying instinct, but also has given up much of the power and size of its wings. The caterpillar of these moths usually moults three times before weaving its cocoon, but under unfavorable conditions it may moult four times before the cocoon-making period.

One may cite example after example of this truth; and each additional one merits the fullest consideration on account of the important conclusion to which it directs us. Thus, one may mention the instance of ewes which in the wild state are fairly pugnacious, and use their horns for offence and defence. But in the domesticated state, where the reasons for pugnacity are largely decreased, this fighting instinct has fairly dwindled away. Their peacefulness and mildness of disposition have become so pronounced that their horns are useless, have consequently atrophied, so that the hornless ewe is now the common type. Again, a certain species of North American swift makes its nest of sticks cemented with saliva. Another species of the same bird in the Eastern Islands, where the supply of wood is quite different, builds nests of nothing more than dried saliva. Take another and very familiar example: in cats and dogs the instinct of fighting is so well defined that they seem to have a natural and mutual antipathy from early puppyhood and kittenhood. As soon as they meet, the hackles of the one will rise, and the back of the other will arch, and both will begin to bite and scratch.

Nevertheless, if they are thrown together under proper restraint and guidance, the fear and fighting instincts become inhibited, the play and the social instincts become developed, until finally they pass their time in peace and concord.

If we look at instinct in the light of these examples, we very soon see that we are dealing with a sort of habit. There are the same elements of sense impressions and nerve impulses, of example, of imitation, and finally the same unconscious repetition time after time in the presence of appropriate stimuli. Ordinary habits may have more of conscious action, of beginning in the individual, and less of inevitable utilitarianism. They may have nothing to do with the species, may have no tendency to appear regularly in all the members of a group, may show no disposition to be handed down from father to son. But there is in both the common factor of a certain definite set of actions following in wavelike procession after a certain exciting cause, and the possibility of modifying these actions by attending circumstances. A habit may be helped or hindered by another habit, a habit may be helped or hindered by an instinct, an instinct may conceivably be

helped or hindered by another instinct, and fully as certainly an instinct may be helped or hindered by a habit.

Commonly persons who think of these things say that habits characterize men, while instincts are the governing force of animals. A little consideration, however, will show that there is an error in the distinction. There is no instinct of animals that man does not possess ; and in addition he has a number of them which never influence lower creatures. But in man the prodigality of endowment tends to simplify the situation. There are so many instincts that one overlays and modifies another, and therefore the resulting action may seem considerably simpler than it really is. Thus, the whole truth of the matter is that we, of all living organisms, possess the richest instinctive life, and likewise we possess the greatest possibility of controlling this trait.

Now we have the facts of our subject laid out before us ; and we may begin to see the practical meaning of it. When we say that a baby has the instinct of speech, we know that he does not make up a language for himself ; he exercises his faculty upon the material of his daily surroundings.

This is the natural way of learning to speak, and as far as it goes it is the best way. But it does not go farther than the original model, it means an utter lack of progress. To help out we have the interference of other instincts and habits: instincts such as ambition, rivalry, pride; habits such as those of education and acquired taste. Without this complex action our faculty for language would be in the most rudimentary stage, and there would be no hope of getting beyond it. Thus it becomes perfectly clear that we have an ever-present responsibility to watch the faculty of expression, never to trust too implicitly to the "natural gift of speech," always to be watchful of the necessary and constant changes in our language. The youth who finds nothing to correct in the way of speaking is the one who speaks badly. In addition, he must be deficient in discrimination, deficient in attention, deficient in the sense of pride which a well-ordered instinct of rivalry brings.

This last phrase, which is so easily written, represents in itself a huge amount of self-restraint, self-direction. In its natural form it is more or less brutal, unknowing. It makes

no clear distinction between what is worth having and what is worthless. That is where the modifying influences, of which we were speaking above, have their opportunity. Very few of our instinctive impulses should be trusted more and at the same time trusted less than the feeling of rivalry. And the only safe way to decide about its value is to examine closely the object of it, and upon that opinion to base our estimation. It is a highly stimulating impulse that would have as much joy in baying at the moon as reciting a poem. Every time it appears we must stop its headlong course, must inquire honestly and plainly where it is taking us, what emotions it seeks to encourage. Is it inciting us to make a parade of clothes, of wealth, of social position, of silly exhibitions of agility and strength, of reckless and useless daring? Then it must be condemned and restrained. Is it encouraging us to excel others in loyalty, in patriotism, in defence of the weak, in a lofty striving after noble aims? Then by all means its strenuous voice must be allowed to fill our ears to the exclusion of all other sounds. The great thing

is the freedom to make a choice, the possession of enough equilibrium to set a just balance between the things for which we are about to struggle.

The feeling of wanting to accomplish large ends is in itself a fine thing. You should be able to make some distinction between this fact of ambition and that of rivalry. Ambition is more self-centred, it is the impulse to excel in our best-beloved field of activity; and therefore it may be taken as an index of character. The wise man has no ambition to be expert in unworthy things; he cares nothing about proficiency in card-playing, in shrewd deceit, in vicious practices; but, on the other hand, the things that are desirable seem to him the natural ones to excite ambition. He is anxious to get a reputation for industry, sobriety of thought and action, public spirit, energy, and similar qualities. In the same way that you can know a man by the company he keeps, so likewise you may know him by the ambitions he cherishes. They are the things that lie nearest his heart; he puts them before his mind's eye as temporary goals, which change

from time to time as his view of life changes. Not only are they valuable in themselves, but also they direct ambitions and instincts which at first seem to have little connection with them.

Especially this trait is to be considered when we think of the great instinct of constructiveness, one of the most powerful impulses that control our lives. By virtue of it each person is impelled to do some sort of work, no matter what its form may be. Nature abhors idleness, she demands a reasonably large amount of time for "getting things done." The lazy person is the unnatural person, one in whom, on account of mental defect or unfortunate training, an exceedingly valuable tendency has been distorted or crushed. All in all, there is scarcely another human characteristic which gives so much or such long-continued satisfaction as the instinct to work. It wakes very early in life, and with proper care continues to flourish for one's whole life. The child obtains pleasure in building a house of sand, and a man enjoys, in much the same way, digging a well or writing a book. The properly constituted mind enjoys doing a thing for the mere sake of the doing; and the

better it is done, the more pleasure does one get out of it. On account of poor mental health, we may fall into the condition of laziness, in the same way that poor physical health may put us in the condition of weakness, dyspepsia, or insomnia. But such conditions are naturally to be avoided, for they mean failure, unhappiness, unprofitable lives. And there is inspiration in the knowledge that such things can be controlled, that we may protect our natural instinct to work, that we may direct it and render it progressively more fruitful, that we may by sufficient effort ward off any abnormal tendency toward laziness.

There is another natural tendency that must be clearly understood in order that it may be controlled. We are born with an instinct of fear, which very often in childhood is unduly developed by bad training and example. In early childhood the impulse is very easily awakened, so easily, in fact, that a few words, the expression of the face, or a frightened manner, is enough to start it into activity. The bare instinct is there, the direction which it is to take rests upon circumstances of training. In such ways children become afraid

of darkness, of being alone, of ghosts, of thunder and lightning, of dogs and cats, of negroes and Chinese, of anything at all which has been connected with the crude instinct of fear. And too often these impressions remain far into adult life, or possibly forever. The especially bad thing about them is the hue of timidity which they are apt to give to the person's entire character. As a result he is apt to be deficient in self-confidence, in aggressiveness, even in the possibility of enjoyment. A more vicious development one can scarcely imagine, nor one that may have more extended results. For this overdeveloped instinct may take the form of a general mental, as well as physical, timidity that can materially interfere with both business and social success.

This thing must be fought against with all of your energy from the first moment of its recognition. You must call to your aid your common sense, your reason, your counter-instincts of strife and aggressiveness. For by this time you are sufficiently acquainted with the subject to know that you can control the frailty. Call to mind such cases as that of General Grant when he was

endeavoring to reduce Vicksburg. He used to tell the story of his great depression, of his overwhelming fear of the desperate enemy. This devitalizing sentiment went on in its evil course until one happy moment when it occurred to him that the enemy had fully as much to fear as he. And directly the whole trend of his thoughts changed its direction. His reason came to his rescue, and controlled the headlong, instinctive impulse. And the same thing may be applied to our little occasions of fright. The enemy or the competitor whom we fear so much has fully as good cause for worry as we have ; and in all likelihood, although he believes that we are truly formidable, nevertheless he has enough control to hide or restrain his fear. When the shameful sentiment of fright attempts to master us, the only safe course is to look at the situation calmly and steadily, to grapple with it, and lo ! its frightfulness will fade away as a mist. It is very much like the thistle that stings if handled weakly, but becomes a straw when grasped with a dominating and forceful hand. This world is no place for the unhappy subjects of fear, for they are the natural prey of the bold man who knows how to fight.

And the same faculty of aggressiveness is of tremendous use in every branch of life. It makes very little difference whether we are working or playing: we must do our little pieces of work with vim, energy, with confident boldness. The largest number of the fights in life is won by a strenuous quality of mind rather than by heaviness of muscle. Everybody knows the story of General Funston, a little man physically, when he put to flight a big cowboy. It happened when Funston was a brakeman on a western train. The cowboy raised a disturbance, declared he was a "bad" man, threatened to "clean out" the car. In point of strength he was by far Funston's superior; but the future general attacked him so boldly and fiercely that his resistance was petty and futile. And the last the other passengers saw of him was his disappearing form as he fled down the track with Funston throwing stones after him.

I remember another instance, of many years ago, that made an exceedingly strong impression upon me. It happened in a football game, and decided the victory. One of the tackles, a strong and aggressive young fellow, got the ball, tucked it

under his left arm, and started down the field at his highest speed. After running about twenty yards he was thrown, and six or seven of the opposing players piled their weight on top of him. He could have stopped play and freed himself from the killing load by calling "down." But he held on to the ball, he squirmed and twisted and pulled himself along for another foot before he was made powerless. On the next play a touchdown was made, and by less than a foot, for the runner was thrown just at the line; and the game was won. In later years I watched that player's progress in business and municipal life with interest and admiration. And I could plainly see that the quality of boldness of purpose, of fearless aggressiveness was the deciding factor in his mature work as in his youthful play.

Every well-rounded character must take notice of the instinct of love, for we are all endowed with it, and all are influenced by it. Every one of us has two needs: the need to love and the need to be loved. The wise man recognizes the claims of both, and endeavors to control them in a profitable manner. Parental love, filial love, love for one's native land, or for one's church

or college can take care of themselves. They are the natural outgrowth of environment, and develop with the normal development of character. But sexual love, the love of a man for his sweetheart, is quite a different thing. No matter how refined it may be, it nevertheless possesses the factor of sexuality; and it should be guarded as one would guard one's hopes of salvation. Like all things, it has equal chances of use and abuse. The use is of great value, the abuse is a curse. It is a fine thing to have a sweetheart, to cleave to her without change or faltering, to guard her with the most scrupulous solicitude. On the other hand, promiscuous experience of this sort weakens our moral fibre, and leaves us spiritually prostrate. It has no physical or mental reason for existence, it is the mark of the moral bankrupt, it is the beginning and the end of a vicious cynicism. A well-ordered and purely conceived love, encouraged at the proper time, and guarded with the most jealous fidelity, is one of the finest stimulants to high exertions that the human mind has ever known. We have no other resource that is so perennially fresh, that is so capable of enriching

us for all time, that is both a consolation and a joy.

The gist of the whole matter is that in instinct we have a condensation of the unconscious experience of the race, of its attempts to work out the best methods of self-preservation and evolution. What is more, this faculty may be modified in one way or another to suit our changing needs. Above all, remember that truth, and in times of weakness or doubt keep on repeating it to yourself, keep on putting before your mind's eye the picture which it makes. The purely natural man has his bad as well as his good sides; and he may so control himself, may so develop his good parts and repress his bad ones, that the endeavor to live wisely and profitably will be tremendously encouraged. He can make the habit of courtesy and generosity crush out instinctive envy and jealousy; the habit of logical examination of things and the resolution to be brave can stamp out cowardice and fear; the habit of truth-telling can abolish deceit. Such a man can make himself sturdy, strong, affectionate, resentful of wrong; he can develop his better instincts so that industry, wholesome-

ness, and determination mark him off from his less fortunate fellows. He can make himself joyous in play, powerful in strife, chivalrous to the weak, respectful to those in authority. For such a man the future holds rewards, because the world needs his work and his example.

CHAPTER VI

Memory and its Development

In the last three chapters you must have noticed a strong chain of continuity by which you progressed from one to another. And now we are about to take up another subject that picks up the links again and carries them on without interruption. This is not at all surprising, for the various mental processes are intimately related. Thus, in dealing with memory, we really have much to do with the faculty of attention, with the power of association, and even — although to a less extent — with instinctive traits. In the chapter now to be considered you will, as in the others, have simple things to build with; for such things are the stuff on which our mental processes work.

Doubtless you have seen how much various persons differ in the quality and quantity of their memory. Some remember anything with great ease, others with great difficulty; in some the

things remembered fade away after a short time, in others they seem to stick with noteworthy tenacity. You yourself doubtless have an excellent memory for certain things, and a wretched one for others. Also you know that at some times your memory is very much better than at others; and almost certainly it has a habit of playing tricks with you, of retaining with excellent fidelity some seemingly unimportant detail, while the big part which you want has utterly been lost. Again, you will find that general habits of life, the environment of childhood and youth, and the power of observation have much to do in giving character to the memory.

By this time you have come to the conclusion that it is not quite the hard and fast thing that it is commonly supposed to be. And in certain ways you are quite right. In one way it would be correct to say that memory itself cannot be increased, that it is born with us, that it can never get beyond a certain stage of development. In another, it would be equally true if I told you that the limit of development, although fixed, is rarely reached, that if we only understood what memory truly is we should be able to

improve the process of association upon which memory depends, and likewise improve our memory. You cannot get more memory as you can buy potatoes, any more than you can buy one or two more eyes ; but you can improve its working power by knowing how to care for it, how to keep it down to its task, how to prevent it from wasting its energy in useless labor. But before you can do this, you will have to know what the process of memorizing really is.

When we speak of the memory of a thing or remembering a thing we mean to designate a process that is quite different from the original condition which we want to reproduce. In the original we perceive the object plainly and simply, we know that it is a part of our actual experience. Our senses become more or less actively aware of certain colors, smells, forms, tastes, or other methods of knowing things ; and these impressions leave some sort of imprint upon our minds. There is in the whole process the element of present reality, of definite and clear-cut conditions, the nature of which we know or can understand. And if we wish to know more of these circumstances, we can do so

by the simple means of examining them more thoroughly, in the same way that we examine a book, or an apple, or a picture.

All this is quite different from what goes on when we remember a thing. In this case we know that the thing is not happening, that there is no present reality, but that it happened some time in the past. We cannot increase our knowledge of it, we cannot go up to it or handle it. We must be satisfied with what we found out concerning it in the past. And we even have no absolute measure of how far away the time of happening was. An event that took place yesterday may have left a dim picture behind it, while an incident of a year ago may be very bright and distinct in the recollection. The element of vividness is an accident whose existence depends upon accompanying circumstances. However, we can control our idea of the time of happening by referring it to and comparing it with other known events that occurred at the same time, we can build up from many sides these associations, and thus easily enough we settle the fact of our having had a certain experience at a certain past time.

A very important element of memory is the conviction that the event actually occurred in *our* past, actually was part of *our* experiences. Anything outside of such limits cannot possibly be recollected; and the nearest we can get to it, is to remember the circumstances under which we heard about it. Thus, we can recollect that we went to Europe last year, or bought a pair of boots last month, or began to attend school a certain number of years ago. But we do not remember the signing of the Declaration of Independence, nor the birth of Macaulay in 1800, nor the founding of the Tammany Society in 1789. We have been told or have read that these things happened at their respective dates, we may remember pictures of one or more of them. Thus we may obtain a fairly good idea of them. But that idea is, after all, a second-hand affair, and differs widely from what is a part of our own lives.

This distinction is especially clear when we recognize the sense of proprietorship that clings to what has happened to *us*, as opposed to all the rest of the world. As we put the picture together bit by bit, we gradually come to feel a

certain nearness which never exists in the case of a foreign object. This sense of nearness, which grows in intensity as we approach the end of the search, often guides us when we are not distinctly conscious of it; and in the rapid casting about that we do, in trying to make right connections in an act of memory, we employ it constantly. Suppose we are trying to recall a man's name. We start at any random name, but immediately we recognize that it is not right. Then we try again, and again we fail; but this time the name seems a bit more familiar. Again and again we try, using every possible means of association. Gradually we feel that we are getting nearer and nearer the goal, that each effort seems to bring us closer than the last, until we feel so close we can almost touch it. It is right at hand, we almost have the sensation of forming our lips in the proper shape for the desired expression. The sense of nearness is so real that when the name at last comes, the whole experience impresses us as we are impressed by reaching a place to which we have been walking.

There are certain plain conditions that have to be fulfilled in memorizing, and the better we

understand their importance the more easily shall we be able to control and develop this faculty. In the first place, the event must have lasted for a sufficient time, must have a long enough exposure, very much as what is required in photography. Some photographs require a very short, others a much longer time. But in every case there is a limit beyond which we may not expect a successful result. In the same way we get no mental picture — or we have no memory — of things which are too brief. This is partly due to the necessity of having enough time in which our brain and sense organs may record impressions, and also partly to the fact that these very brief events have no associations, are quite isolated. Thus the various movements of a fast horse are so rapid that we are not able to get a conscious picture of each one, and what we really see is a combination of all of them. Therefore, when a snap-shot photograph is taken of such a horse, the picture is quite different from what we expected. Somewhat of the same thing we may notice in a boy who energetically whirls a pail around his head. The pail, instead of looking like a plain utensil that is being rapidly put in one place after an-

other, resembles a ring of light. Therefore, if our previous knowledge did not come to our aid, we should never know that we were looking at a pail at all.

Another thing which has considerable influence on the question of memory is the freshness of the impression. As every one knows, a thing that has just happened ought to be better remembered than one more remote. And the reason is not hard to find: for whatever impressions we receive are so recent that there has been no opportunity to wear them out, the various factors have not been lost or confused, there is an unbroken chain of associations, none of which has been sidetracked or tampered with. Nevertheless, this factor is, on the whole, not as powerful as that of repetition. Here the original impression is rehearsed again and again, so that the resulting effect sometimes increases in a geometrical rather than in an arithmetical ratio. The chain of associations is forged over and over, each link is strengthened, and the whole series loses the separate character of its parts. Each repetition not only has its own effect, but also it develops and emphasizes the clearness of the preceding memory.

And likewise with each repetition we become more intelligently able to distinguish what is really noteworthy and interesting, and to separate it from what is trivial and uninteresting. The main factor, however, is the repetition by which the original path is ploughed deeper and deeper.

The factor of attention is yet another and an exceedingly important element in obtaining our result. The thing for which we are looking is bound to make more impression upon us than that which strikes us in a loose, haphazard fashion. What is desirable, or suitable, or pleasurable, will naturally attract us and hold our interest. It does so on account of valuable considerations, because it is bound up with an indefinite number of circumstances which attend our needs, interests, and pleasures. Therefore, this thing to which we bend our attention receives an added weight in proportion to the number and weight of its associations. The small boy easily learns and remembers all the rules and motions of a new game, in the same way that the man learns and remembers new details of his business; and similarly the little girl remembers the names and dresses of her many dolls just as readily as her

mother commits to memory the succession of ingredients which make up a new and desired cake. The boy's power of memory may be as good as his sister's, but he would have far more difficulty in learning all the small facts about her dolls, just as his mother would have to make considerable effort to assimilate all the business details that his father remembers without the least trouble.

Throughout this account you may have noticed that a single factor, that of association, recurred time and again, and stood out plainly, like a red pattern on a dark ground. And the more we think about the subject, the more clearly we shall see that association is the very basis of memory. Without association we could not remember anything, while with it there is a corresponding degree of memory. No matter what the thing may be, whether it is great or trivial, our ability to retain it depends upon this fact. We never attempt to think of an object quite alone; for it becomes a matter of practical consideration only when it has some sort of relation to us. A piece of steel by itself stands for nothing at all; but when it has been

fashioned into a pair of skates it immediately comes to represent very much. By means of it we can have pleasure, exercise; we may use it for transportation, we may buy, sell, exchange, or give it away; it gives us various experiences in regard to metal-working, the temper of metals, oxidation — in fact it is associated with a great crowd of impressions of various sorts. Each associative link represents a certain effect made upon our minds. And the stronger this link is forged, the more emphatic is the effect upon us. This strong impress upon our brains is equivalent to recollection; and the amount of memory is in direct ratio to the number of associative links that we possess.

A very striking example of this truth may be seen any day in our experience with certain business men who have succeeded notably in their commercial enterprises. One of these successful men may surprise us by his evident lack of intellectual curiosity and intellectual force, by a general deficiency in all important things excepting his narrow field of work. He may be crude, ignorant, unmindful of all the refinements and gentlenesses of life. He may offend

our taste by all he speaks and writes and does, his outlook upon the world may be so narrow that it seems no more than a slit. But in spite of all, he dominates his little world. He even may succeed in commercial life where his more cultured neighbor fails, and his example is sometimes quoted against the usefulness of a higher education. The truth of the matter lies in the valuable trains of association and the intense memorizing effects which his experience has given him. For a certain time he knew of nothing and cared for nothing outside of his business; there was nothing else that appealed to his tastes and desires; all his time and energy were devoted to the one object of making money. Consequently he went about his affairs in an intense fashion, with a single-hearted purpose, with a steadfast determination. All its details were interesting, he dwelt upon them from morning to night, he went over them again and again. For him the outside world existed only in so far as it expressed or touched upon his business affairs.

One can very easily see that in this one department he had an immense advantage over

the partially cultured man, the man who had only enough training to open up a view of things beyond his reach. The crude man's associations and the memory resulting from them were all clustered about one object; and his command over that object became unusual. The partly cultured man dissipated his power of forming associations, his memory and the valuable help that it gives were similarly scattered, and the logical outcome was a general loss of force. He must necessarily have been in an entirely different position from that of the thoroughly educated man, who learned to control his powers with directness and intensity, with such a careful adaptation of means to ends that it inevitably insured a wider success than he could otherwise have obtained. He had the capability of succeeding in both directions, for in both his mind worked easily and surely, he formed his associations discriminatingly, his memory was an ever present help.

One of the considerations that ought to stimulate us to get the best growth and control lies in the fact that our brains are imperfect, and that each one has its weak and its strong

parts. Some brains are notably impressionable, others notably impervious to impressions. Some may be compared to putty in receiving and holding every mark that is made upon them. But also, like putty, they often may lose every trace of that mark when a trifling change of circumstances takes place. Others may be compared to rubber which rebounds from every impact, but which, when put into a set form under the right conditions, resists with equal tenacity a change of form. Likewise, it is a matter of common experience that the various centres in the brain may be more or less developed, and such natural endowment has much to do with shaping the person's life. We see the same fact in a marked form in animals. The eagle's visual centre is remarkably large, and therefore he has his well-known power of keen sight. The dog's centre of smell is very much developed, and thus he is able to follow a scent over miles of difficult ground with no other help than this one sense. Certain persons excel in the remarkable development of the centre of touch, and consequently are able to accomplish noteworthy things in this direction.

Others, again, are especially gifted in their centre of coördination, and therefore have much ease and pleasure in learning games and sports that demand a fine balance. Such congenital conditions have a decided influence upon the faculty of memory. These gifted natures obtain unusual experience in their respective branches with notable ease; and their superiority shows us the way in which we may develop ourselves. While the ordinary person acquires rudimentary practice, they are already far advanced. The highly endowed persons have special careers, they obtain an unusually wide view from the very beginning, they see their subjects from every standpoint. Their fund of associations is particularly great and varied; and therefore in this direction they have unusual memory. Very rarely we find a mind that combines a large number of these well-developed centres, in addition to a large power of retentiveness. And then we have a remarkable man, one who evidently is so far above his fellows that we call him great, a genius, a leader of thought. But the same general rule holds good of him and his weaker brother. It is

wrong to regard such a man as beyond human understanding, or as gifted with a more nearly divine power than his neighbors possess. He is fully as human as they, and his powers are founded upon the same general scheme. He bears the same relation to them mentally that the naturally strong man bears to his fellows who are physically weaker. The difference is rather one of degree than of kind.

Now let us get at the applications of the subject. (If we want to remember well, we must know how to forget.) This seems startling, but after you have thought about the matter, your astonishment will pass away. (Forgetting, if rightly managed, means no more than getting rid of waste matter.) The difference between the right and the wrong forgetting is very much like what exists between a good and a poor housekeeper. Both have on hand a large amount of utensils, supplies, and miscellaneous articles that accumulate in the course of everyday life. The good housekeeper has both method and foresight; she knows what is useful, and that she keeps. Likewise she knows what is worthless, and that

she throws away. The poor housekeeper does not discriminate; she keeps both good and bad, and wastes both good and bad.

Every one may be said to be in an analogous position as far as the care of his mind is concerned. Every day, every hour, every minute he receives an indefinite number of impressions with their various associations. Even in low states of consciousness the process goes on, so that there are only minute periods when it stops. It must be easy to see that if all these impressions were stored up, the mind would be weighed down and overloaded with a great mass of trivial and often useless details. It is much in the same way that the housekeeper would foolishly fill her room and closets, if she attempted to save every scrap of paper or wood or food or fabric. The wise plan is to keep the useful pieces, and rid one's self of the waste. That is just what the mind ought to do for itself; and the better trained it is, the sharper line does it draw between the two kinds of things. This trained mind decides, clearly and rationally, what it wants to know, and simultaneously it puts all foreign matter in another

list. It sets itself to regard the chosen subjects with all possible attention, to get as many normal impressions of them as it possibly can, and thus it accumulates a store of memories that in after time it uses with pleasure and profit. The great thing is to use the utmost concentration of attention, and thus to build up the greatest number of associations.

Now that you know what memory really means, it will be easy to understand the principles upon which the various "memory-systems" are made. These systems appear from time to time, but each one depends upon the same general plan that the others used. The main idea consists in strengthening, according to some clearly directed scheme, the associations of the thing in question, or in increasing the number of associations. Thus, the oldest known system, one that dates back to the fifth century before our era, seeks to make a set of associations with some well-known locality or house. Suppose you wanted to remember a train of facts or ideas. In accordance with this system you would impress upon your mind a plan of the house or grounds, with each part in a well-

understood order. Then you would associate the first idea with the approach, the second idea with the next part, and so on. Let us take a practical example: I want to remember a list of the presidents of the United States. I impress very clearly upon my mind the plan of my house,—first the front steps, then the vestibule, then the hall, then the waiting-room, and so on. I make this plan so familiar that unhesitatingly I know the relative position of any room. Next I assign to the first place (the steps) the first president, Washington, and repeatedly think of him in this connection. I associate John Adams, the next president, with the vestibule. In the third place, the hall, I put Thomas Jefferson, the third president. Without much effort I can make such familiar bonds of association with these famous names that the list of them becomes firmly fixed in my memory in their rightful order.

Any such method must necessarily be cumbersome; and doubtless it is as hard to make and remember an elaborate system as it would in the first place be to remember the bare facts. Some persons might even find it harder. But

the plan has the advantage of giving an orderly character to our efforts, and at the same time providing a method of concentrating our attention. This last factor is so valuable that it alone would justify any ordinary amount of trouble if we could only obtain the result. Of course, if we can by our unaided efforts do the concentrating, the general benefit would be all the greater, and at the same time we should not be dependent upon any artificial system.

One of the most difficult things to remember is a set of numbers, such as dates; and the difficulty exists because we are generally unable to have many associations with figures outside of those produced by reading, writing, and speaking them. Many systems have been devised to remedy this weakness, or in other words to supply added associations. The best known method, which was published in Germany early in the last century, is to assign to each digit a letter. The equivalents were as follows: —

1 equals *t*	6 equals *d*
2 equals *n*	7 equals *k*, or *g*, *q*, *c* (hard)
3 equals *m*	8 equals *b*, or *w*, *v*
4 equals *r*	9 equals *p* or *f*
5 equals *l*	0 equals *s*, *x* or *z*

The other letters of the alphabet are to be used in filling out words of which the equivalents were the framework, but these *assistant* letters were understood to have no numerical meaning. Now let us apply the system. I want to remember the date of Shakspere's birth, 1564. The equivalents would be *t*, *l*, *d*, *r*, which with assistant letters make the words "*t*he *l*ea*d*e*r*." These two words describe Shakspere's position in literature, and therefore would easily be remembered. Take another example: you want to remember that our great civil war began 1861. The equivalents would be *t*, *w*, *d*, *t*; and these could be made to read, *t*o *w*oo *d*eath. The tremendous mortality of the conflict would fix the words in one's mind, and the date could not be forgotten.

In all these plans there is an opportunity of using much ingenuity, not only in applying the set rules, but also in varying them according to your own needs and wishes. Thus, for instance, you wish to remember the colors of the spectrum. These colors in the order in which they are commonly quoted are: violet, indigo, blue, green, yellow, orange, and red. For the purpose of les-

sening the difficulty of remembering the names in their succession you might form a word from their initials, *vibgyor*. The word is a barbarous one, but after you have said it a few times you will know it, and consequently will not be able to forget the colors of the spectrum in their proper order.

There is a better, more rational method, which seeks to improve the practical quality of memory by *knowing* the things to be remembered. Such a method goes about the matter in a logical way, it examines the subject carefully, finds out its characteristics, tabulates and files them with exactness and care. An orderly arrangement of this nature naturally improves the power of recall, and at the same time develops praiseworthy mental habits. This is the method that is used at the present time in teaching the natural sciences, and we rely upon it for the benefit which the study gives. It is unnecessary to say how far superior it is to the more unintelligent way of helping the memory by mechanical means, whether that means is an elaborate mnemonic system or merely tying a string about one's finger. These things are really makeshifts and give no permanent help.

One last fact we must keep in mind, and that is the effect of health upon memory. Sickness, fatigue, and care affect this faculty as they do all the others of the mind, by a general loss of vitality and energy. The failing memory of old age, which is merely a sign of increasing feebleness, occurs in this way; and its irregularities are to be expected, for human strength, like a green stick, does not break clean. It is particularly desirable to escape from the idea that memory is a faculty which exists quite by itself, that like a piece of arable land it may be cultivated one year as well as another. On the contrary, it becomes of use in proportion to the systematic improvement of the general mental life. It is a means of amassing impressions which, if they are of the right sort, may forever be a joy; and by keeping it unsoiled we can avoid impressions and thoughts which may blot our lives.

Guard your mind from unfavorable impulses and associations as you would your body from disease. For when they have once made their effect, you will have to struggle against them all your days. Gather and store up healthy

and laudable impressions as you would acquire strength of body. For they will in all the future years color your thoughts and deeds with a hue of beauty and grace. In the final analysis the whole matter resolves itself to one of individual choice and responsibility. Your memory, like a well stocked and carefully cultured garden, may easily be made both beautiful and profitable; or on the other hand it may be the repository of ugly and harmful things. Do not for a moment lose sight of the fact that the credit, one way or the other, belongs to you and only to you. Under right conditions the development of memory may be reckoned as a sort of salvation. Do not put it off for some future time; for most forms of salvation belong to the present tense.)

CHAPTER VII

The Bonds of Habit

In habit we have one of the very fundamental forces of living organisms. Its active influence begins to mould us at our entry into the world; and its work may be seen long before any of the few great mental impulses, with the exception of instinct, are operative. Even the power of association appears late in comparison. All through our lives habit guides and controls us, even when memory fails and attention flags. "Habit is the deepest law of human nature. It is our supreme strength: if also, in certain circumstances, our miserablest weakness," said Carlyle. This opinion coincides with what every clear-thinking man has believed who devoted sufficient attention to the subject, for the evidence inclines all in one direction. Indeed, we should be fairly safe in describing our ordinary life as made up of bundles of habits. If we

try to think of acts which are quite beyond this influence, we are driven farther and farther away from the principal activities. When we arise in the morning, we always get out of bed in the same way; we may not be conscious of this similarity in action, but it is there just the same. We wash and dress ourselves with the same order of movements, we seat ourselves at the breakfast table always with the same sequence of motions; and thus the day goes on. The only persons who are somewhat free from this routine are the very young, who have not had enough time to find out the easiest way of living.

That is the real meaning of habit — the easiest and simplest way of getting things done. Dr. Holmes used to say that "habit is a labor-saving invention which enables a man to get along with less fuel." The economy consists in the skill and accuracy which well-developed routine gives. Eating dinner is so habitual a thing that the required action takes place with machinelike regularity. The simple act of drawing out the chair and seating one's self is the easiest thing imaginable. But if it had to

be done each time as a new series of movements, there would be little time left for eating. You can prove this by watching a man try to do a new combination of simple motions, such, for instance, as learning to swim. The amount of muscular control and coördination is just as great in sitting down as in swimming, but the one act has by countless repetitions become commonplace and habitual, while the other is new and has to be learned. If the second act had been performed as often as the first, it would have been as easily accomplished. The difference is one of mere repetition, of cumulative skill obtained through a new reaction of the brain cells: in other words, of habit.

It makes no difference whether the habits are simple or complex, for the same laws hold good for the one as for the other. When we lace up our boots, we practically always begin on the same foot, we put the strings through the holes with a certain set of motions, we tie them with a certain amount of tension and with a certain knot. The baseball pitcher in pitching a certain sort of curve always throws himself into the same position, takes the same number

of steps, swings his arm in the same manner.) When the surgeon in performing an operation makes an incision, he holds his knife in a certain definite fashion, he steadies the tissue with his free hand in a certain manner, he poises himself and bends over his work, just as he did hundreds and thousands of times before. He does not stop to think how to grasp the knife-handle, how much force to put into the stroke, that the tissue is soft, that he must be prepared to keep the incision free and clear. All these things are done in a manner so sure and unquestioning that it might almost be called automatic. An author, when he sits at his desk, not only uses his pen and paper in the same way, time and time again, but also he takes the same view of life, of the parts of life which he is writing about. This is his peculiar quality, his style and essence, and he can no more depart from them than he can from his manner of facial expression, or his way of walking, or his way of donning his clothes.

The fine thing about the faculty of habit is the possibility of successfully cultivating it; and every one, no matter who he is or where he

may be, possesses the power of controlling it. This is by no means a matter of theory and speculation; it is a real fact, demonstrated by experience, made certain by the conditions of our physical constitutions. Human beings may be defined as animal organisms that of all living creatures are best able to adapt themselves to their environment. They are able to do this on account of their faculty of accomplishing with progressive ease the thing which has been found profitable. The first doing may be very hard, for the nervous and muscular systems have a brand new lesson to learn; the second, third, and fourth may be a bit easier, for the body has begun to recognize what lies before it; the following attempts ought steadily to become easier. The mind has repeatedly gone over the same path, it has become used to the situation, it has fallen into a new habit.

This simile of a path is a convenient one to illustrate the theory of what takes place in the mind. Suppose some one impression passes from a sense organ into the brain. Some motion or changed condition takes place in the nerve-structure. Possibly it may be as convenient to say

that a certain sort of vibration is set in motion in the structure. At all events, something has happened that never happened before; it happened at some particular area, for it started in one locality and ended in another. The next time it starts, the same beginning and end mark its course. Thus we have the idea of a path accurately carried out. With more examination of the subject, the illustration appears more exact than ever before; for we know that the more a path is travelled over, the more clearly defined it necessarily becomes. Likewise, we know that the more an action is repeated, the surer it is to become habitual. The same vibration occurs again and again, the parts involved adjust themselves with more ease and certainty to it, and the resulting action requires less effort at each repetition. With each additional characteristic of a path we have one that may be applied to a habit: a well-worn path becomes a rut, and whatever travels along the margin is bound to slip into the depression. An old and deeply marked habit has a similar nature: for whatever impulse approximately coincides with it, or touches its edge, slides off into the old rut, shows itself as the habit itself.

A path means economy in travelling. It selects a part out of a rough, untried region, makes it smooth and clear, diminishes friction, saves wear and tear. A habit means economy in action. It selects a certain course out of an infinity of possible courses; the progress of an impulse over this course is sure, steady, unattended by an outlay of conscious energy and effort. The saving of time is incalculable, one has difficulty in obtaining an approximate conception of it. And we must not fancy that this susceptibility to habits belongs to human beings alone. On the contrary, animals, both wild and tame, have it as one of their main features; and even inanimate things are controlled by it. As every one knows, water crystallizes or freezes at 32° Fahrenheit. That is its habit, and it reacts to the proper amount of cold with regularity. But if the attendant circumstances of the habits are changed, the habits will likewise be influenced. One of the attendant circumstances of freezing is that there shall be a reasonable amount of motion in the water; and if the fluid is put absolutely at rest, the usual environment is changed, and the freezing does not take place at

32° Fahrenheit. Now if you restore the missing circumstance, if you agitate the water in the least degree, you immediately bring about the original condition, and you see the water freeze even while you are looking at it.

Certain stones and woods have what we call lines of cleavage, so that if they are struck in the right way, the resulting split always occurs in a certain direction. That is the habit of the stone or wood — which may be changed under changed conditions, just as we may vary our habits. Certain hard-woven woollen fabrics acquire a shine after being worn and rubbed. They do so with regularity, it is their habit, and they must follow out the law of their being just as we must follow ours. Yet more plainly does this disposition occur in living beings, even among the lower orders of animals. The night moth has the habit of flying toward a light, and must so act whenever she sees the glow. A dog that has been for a long time fed upon a certain sort of food, so that he has become habituated to it, will sometimes fast for days or even starve before he can bring himself to eat something else. I have seen a canary bird, that had become thor-

oughly used to his cage, flutter about in terror and distress when he happened to escape. A horse that has been hauling a wagon over a certain route will regularly traverse the same road whenever he has the opportunity. He does not stop to think about the streets, the corners, and the houses. The constant repetition has saved him the trouble and effort. He becomes more or less conscious of certain impressions upon his sense organs, and without any force of will he reacts in a definite manner. He accomplishes the desired results with the least possible demand upon his attention, in an easy, habitual fashion.

Similarly human beings go through their ordinary acts and motions with the minimum amount of wear and tear, the least expenditure of power, and therefore have a correspondingly large amount of force left for the volitional things. This may be dramatically demonstrated by observing persons who suffer from certain diseased mental states in which the faculty of habit is more or less abolished. They must decide what to do in every minute of conduct; they are uncertain whether to sit or to stand, to take one chair or another, to rest upon one leg or the other.

They are not able to accomplish anything, not even the most necessary acts; they are very much in the position of the donkey who starved between two bundles of hay, because he could not decide from which one to eat.

It naturally follows from this that the better defined our useful habits are, the less time and effort must we devote to the commonplace, routine things of life. Even while we are doing these commonplace things, our minds may be busy with other matters. The boy who is learning to maintain a good carriage while walking must keep his attention fixed on the posture of his shoulders; but as soon as the carriage has once become habitual, the strain passes away. The ordinary bicycle rider must use his hands to steady his bicycle; but practice and habit will enable him to ride with equal ease without the steadying use of his hands. In the game of baseball the catcher becomes so habituated to the action of the batter in striking at a pitched ball that he does not become confused by the rapid and complex motions of both bat and ball; and as a result, he is able to watch the opposing players on the

bases, and direct his share of the game. The musician must become so habituated to reading musical notes that the process is carried out in a practically automatic fashion; when he has arrived at such a stage of expertness, he can devote all his power of concentration to the meaning of the music, or he may be able to talk with some other person, or to think of some foreign subject. Such routine work thus becomes remarkably simplified, the resulting economy is of radical importance.

At the same time that the work becomes simplified, it also becomes more exact. When you do a thing so often that it has become a habit, your attention is far past the point of strain; it has no longer the opportunity to wander, it devotes itself to other affairs. The muscles then work surely, with a fatalistic steadiness. There is no room for indecision, for experiment, for weighing the yes and the no. An action, having been often enough performed, so that it requires no further thought, must necessarily be done in a clean and finished manner. An expert typewriter not only does not have to think of the position of the spacing key and

the amount of force necessary to move it, but also her muscles have become so finely coördinated and her sense of position so finely adjusted that she strikes the key at exactly the right time, the right place, with her finger at the right curve, and with just the right outlay of exertion. If she consciously tried to do all this, she would not succeed as well as if her attention were fixed on something else; for there would then be an element of control exercised upon a thing which needed no such control, there would be the superfluous fact of doing a thing already done. In exactly the same way you are not able when closely watched to do what you could accomplish with ease if unwatched; similarly many students are unable to acquit themselves in an examination as well as in an ordinary recitation, and the more important the examination and the greater the occasion, the more does the strained attention interfere with satisfactory performance.

This freedom from self-consciousness is most marked in young children; it is one of the reasons why they acquire habits more easily than older persons. An additional and possibly more impor-

tant factor is the ease with which growing organisms fall into certain ways of doing things, of acquiring habits. The paths in the brain have not yet been formed, or have been no more than partially formed. There is thus a large opportunity for making full and unimpeded impressions. In the adult, on the other hand, so many impressions have already been made that new ones are with more or less difficulty received. And even if they do find a place, they are apt to conflict or partially coincide with other previous ones, so that the motor expression is blocked or sidetracked. The adult does not and cannot possess the soft, plastic disposition of the child or even the youth. His more mature nature has "set," as plaster "sets"; with increasing age its hardness increases, until in old age it is as difficult for him to form new habits as in childhood it was to avoid forming them. This characteristic of childhood is the universal mark of new tissue, and should be regarded as an infinitely precious one. It enables us to form the young creature to a remarkable extent after our plans, it enables the youth in some reasonable degree to determine the course of his future life. It is one of the principal elements

in human beings that make for general progress. By reason of this condition the growing wisdom of adults can be moulded into a permanent and living form. In the mature person such wisdom is acquired, is artificial, always remains a veneer. In the immature, its results may become a part of the very structure of character, may be so thoroughly worked into the spiritual and mental fibre that forever afterward it will show its influence in both thoughts and deeds.

Indeed, the safest way to form habits is to impress them before the time of maturity has arrived. Previous to that period the real building of disposition and character takes place, while later experience merely cements and hardens the form already obtained. Of course different persons will vary in the time of maturing, but certain general limits may be set with sufficient safety. With rare exceptions the woman of twenty-four and the man of twenty-eight have arrived at a potentially fixed condition, and whatever progress they make in later years is merely the logical development of the habits they have been accumulating. In most cases the process of accumulating has been so gradual, and the person

has had so little faculty of self-examination, that the habits become ingrained before their influence is recognized. Schiller could never write with ease unless there were rotting apples in the drawer of his desk from which he could now and then obtain an odor that seemed to him sweet. Wagner required a certain costume before he could compose corresponding parts of his operas. Gladstone had different desks for his different activities, so that when he worked on Homer, he never sat among the habitual accompaniments of his legislative labors. Again we can easily see the truth of this statement from the fact that very petty and unimportant habits — tricks of manner which are so light that the gusty breath of time should have blown them utterly away — persist long after we have outgrown them. Scarcely any adult person is without some such traits ; and though he may become logical and wise and learned, nevertheless the old habits stick to him. Dr. Johnson's habit of touching fences and posts as he passed them, his fear of ghosts, Dr. Holmes' long-abiding fear of ships are well-known cases in point. How many of us, in walking along the street, find ourselves unconsciously avoiding the cracks between

the flagstones? In our childhood we got the habit of thinking that we might avoid bad luck by stepping over the joints in the sidewalk. In our present mature years we know what a silly superstition it was; but nevertheless, when we are not thinking, the old habit reasserts itself, so that we find ourselves, now and then, taking a short or a long step according to the pattern of the roadway.

In persons who do not consciously endeavor to control their personal characteristics, the formation of habits is so steady and sure that the final form leads to decisions and acts which may seem strange or illogical to minds with a different set of experiences. These decisions are really not made on reasonable, logical grounds; and in a certain way the persons in question can scarcely be said to be responsible for them. They grow into their ways and become case-hardened; they absorb their manners, their standards of right and wrong, of what is desirable and undesirable. And the limits thus laid down are apt to last throughout their lives. They have crowded themselves within a narrow form, and there they must live forevermore. A striking case of this fixity

of habits occurred in New York City not very long ago. A wealthy woman became much interested in the condition of the immigrants who crowd the lower east side. She saw their hardships, and sympathized with them in their misery. She recognized that many of their misfortunes arose from overcrowding. Their high rents, their constant sickness, their unclean and sometimes vicious characteristics she attributed to this cause. She became fired with the resolve to help them; and for the purpose she rented and partly furnished a number of small cottages in the suburbs. She believed that they would be eager to obtain these new and comparatively luxurious homes; and as a final inducement she asked no rent until such times as they had fully and comfortably established themselves. She informed them of her plans and invited them to avail themselves of the new opportunity. And then she was astounded when they refused to leave their homes, their narrow and overcrowded streets, the pushing and the crowding and the unrest of their cramped domestic careers.

She did not know the force of habit, she was

totally ignorant of the hard and fast condition into which people grow. She had never stopped to consider how necessary it is for the world at large to have such repression. Without this control there could be no peace, no safety, no steady growth in civilized society. The poor would attack the rich, the lawless and violent would assail the peaceful, the indolent would refuse to labor, the regularity and steady discipline of well-ordered life would absolutely cease. In their place anarchy would reign, and each day would make confusion worse confounded. Imagine, if you can, what animals would be if they lacked the restraint of habit. Man's power over them would cease instantly, and their strength would be a terrible engine of destruction. Men would be as much worse as human intelligence exceeds brute intelligence. One is quite safe in declaring that habit is the great fly-wheel of the community; for its action is an index of the working and the wholesome action of the entire social machine. Its unconscious force is stronger in most people than the conscious power of their will; in a dim sort of way they recognize this, and speak of the compelling force of

"second-nature," or of "acquired disposition." They practically acknowledge that here is a force which is to all intents and purposes elemental and uncontrollable, and that to attempt to control it is like trying to control the necessity of sleeping or eating.

Nevertheless, habits may be controlled; they may be weakened, or strengthened, or abolished. Once more we may use the old analogy, and point this truth by the like possibility of making a path less clear than it was, or broader and better defined, or utterly blocked up and obliterated. The bigger and better made the road, the more labor is required to change or cover it up. And, in the same way the more pronounced a habit, the greater is the trouble to blot it out. The only factor involved is the amount of labor required to make the change; the possibility of making the change need never be questioned. The habit may be so confirmed that the breaking of it entails much discomfort, or hardship, or even functional disturbance. But the disturbance under ordinary circumstances is no more than temporary, and the organism soon returns to its original condition

of equilibrium. In some cases the departure from the original, normal state may be comparatively enormous, as for instance in the excessive use of tobacco or alcohol, in the deformity caused by special trades, in the perversions of form which certain fashions bring about. The habitual drinker becomes more or less used to alcohol, his equilibrium is tolerant of quantities which at first would have prostrated him, and his internal organs gradually assume a form that is characteristic of the steady user of alcohol. The cloth-cutter's left fingers are bent at their first and second joints from the habit of holding down the cloth with the extended left hand. The woman who has for a long time worn tight corsets is apt to have a weak back, flabby abdominal muscles, sluggish intestines.

The effects of such sorts of habit are truly organic; but nevertheless they may under favorable circumstances be atoned for. So long as the parts have not been destroyed, a sufficient amount of care and wise control will set them right again. The drunkard's stomach may be restored to its normal tone, the stretched tendons and ligaments of the cloth-cutter's hand may

be made to contract, and the exhausted abdominal muscles of the foolishly dressed woman may be made strong. But each and every one of these changes demands vigorous and continued effort: the exertion may possibly be so great that the person is temporarily more incommoded than he was by the faulty habit. But if the wise course of treatment continues, the old disability will vanish, a new path will be made in the brain, a new habit will start into life. Here is where will, attention, and concentration of purpose can help the physical processes of the brain; for by using our power of choice and by deciding on a suitable plan of action, we can materially aid in the destruction of undesired habits and the building up of those that we need.

Such a plan is one of common sense, decision, and strength of purpose. If you want to abolish a habit, and its accumulated circumstances as well, you must grapple with the matter as earnestly as you would with a physical enemy. You must go into the encounter with all tenacity of determination, with all fierceness of resolve, — yea, even with a passion for success that may

be called vindictive. No human enemy can be as insidious, as persevering, as unrelenting as an unfavorable habit. It never sleeps, it needs no rest, it has no tendency toward vacillation and lack of purpose. It is like a parasite that grows with the growth of the supporting body. And like a parasite it can best be killed by violent separation and crushing.

Every time you make an unsuccessful attempt, the final crushing is indefinitely postponed. The path has proved to be too big for your force of road-destroyers. Every time you put off the attempt, the desired result fades farther and farther away. The habit persists, and from time to time the path becomes deeper and broader. In addition, during such a period of weakness and indecision you may be fostering yet another habit — that of expecting defeat. From this lack of confidence, little faith in yourself and in your destiny, you must by all means and at any cost escape. There is nothing more devitalizing than that, for the man who does not believe in himself can scarcely make others believe in him. He who has the enthusiasm of belief in self, a sentiment that urges him on to higher

states and never permits him to lose sight of his high purpose, is the one who can perform wonders.

Every good habit, no matter how unimportant it may seem, is worth cultivating; and sometimes the things which seem trivial are really of the greatest value. Possibly one of the finest is the habit of thoroughness, that faculty of doing a thing — no matter what its nature may be — in a complete and conscientious manner. It makes very little difference whether you are preparing a lesson or playing a game of football, whether you hold a responsible position in a business or are puzzling over a chess problem. Each successive step must be done with the utmost care, must be done each time as if it were a new and interesting step; you must cultivate the habit of looking at each part of the game from all possible sides, endeavoring to see all its relations, trying to find out whether your work can be improved. Such a method must invariably lead to success, for it represents a sort of energy that is rare. You can see how high such a faculty is rated by the well-known aphorism that "genius means the capacity of

taking infinite pains." And yet, after all, such genius is a habit pure and simple, which any youth can develop in himself, which every youth *ought* to develop.

An equally important habit, and one that goes hand in hand with thoroughness, is that of energy. The public and private life of President Roosevelt is full of examples of this quality: and when we examine them, one seems finer than the other. Consider what he did at the outbreak of the Spanish war. He was then Assistant Secretary of the Navy, a position of great honor and distinction. When war was declared, he saw an opportunity of signally serving his country if he could gather a regiment of hardy, seasoned, athletic men, such as he had seen and known all through the country, but especially in the West. Although he was without practical military experience, nevertheless he knew that such men would make the finest sort of soldiers if only they could be brought together and trained. With characteristic energy he lost no time in delay. He issued a call for volunteers; and from every part of the Union picked men flocked to him, attracted by his

boldness, his honest directness, his energy. He resigned his position — and all the sharp politicians were stunned by his "recklessness." How the Rough Riders were equipped, drilled, transported to Cuba; how they sweltered in the tropic heat, toiled over almost impassable roads, and finally stormed San Juan hill with Roosevelt at their head — all this is a matter of history. The victory was glorious, the leader's care for his men was touching, the devotion to a noble ideal was highly patriotic. But as inspiring a thing as one can well imagine was the force which he threw into the whole enterprise, and by which he made it successful from beginning to end. It makes very little difference what we call this trait—energy, "push," "hustling"—it stands for only one thing. The significance of the matter is plain enough. Whatever lies to your hand, do it with all the vigor you possess, with every drop of force that is in you. I do not mean now and again, on great and rare occasions; but all the time, whenever you have an opportunity to show the stuff of which you are made. Such opportunities are as plentiful as cold days in winter; they may occur in

making a career, in courting a sweetheart, in playing a game, in buying a home. Therefore by all means form the habit of trying as hard as you know how, of regarding ease as a device of the devil, of forcing yourself to perform more than the ordinary man does.

There is one habit in especial that seems to me to crown the list of personal traits, and that is the habit of truthfulness. Ingersoll used to call this quality "the oak about which all other virtues twined." His figure was not a whit overdrawn, for without truth no character is worthy of respect. Lacking this one thing, all ability makes for evil, all striving is as Dead Sea fruit that turns to ashes in the grasp. The plainest mark of greatness of character is an abiding hatred of a lie, whether in word or deed, in thought or intention. This is the root of all fair dealing, of all peace and concord, of all confidence and deep respect. The man who lies to his neighbor will lie to himself; and he who lies to himself cuts the ground from under his own feet. Truthfulness grows as any other habit. It is not born with us, it must be learned; and the learning is best accomplished

by practical lessons that are forever being repeated. A deviation from the truth is a sin against the moral idea, the religious idea, the ethical idea, the scientific idea. Moreover, it is so entirely superfluous, so subversive of progress and success, that the man who acts it out, represents a wasted life. Truthfulness is a habit, falseness is a habit; you may take your choice as you would between gold and dross, between sickness and health, between life and death.

There is no greater guarantee of success than a clear-cut estimation of the means at our disposal, the stuff with which we expect to make our way in the world. A man's habits are to a large extent his stock in trade, and the world is very apt to patronize him according to the value of his wares. Like the careful merchant, he should from time to time take an inventory of his goods, he should strike a balance sheet, and find out where he stands. Is he careless, inexact, unpunctual; is he weak, vacillating, lacking in principle; is he lazy, deficient in honesty, afraid of responsibility, wanting in initiative? Then his life must be a petty one, his stock in trade is worthless, he is bound to

fail. On the other hand, honesty, fair dealing, courtesy, affectionate bearing, courage, spiritual saneness, these are the things that mark the noble nature, that make life blessed. And all these things are habits, to be strengthened or weakened, to be made great or small, to be chosen or rejected. "Habit is our fundamental law; habit and imitation, there is nothing more perennial in us than these two. They are the source of all Working and Apprenticeship, of all Practice and Learning in this world."

CHAPTER VIII

Hypnotism and Suggestion

As we progress from one chapter to another, it has been easy to see how closely the various topics are related to each other. In fact, the connection is so intimate that from a very few focal points we could branch out in the direction of any one of them. The faculty of attention is one of these focal points, and it inevitably leads to association, to memory, and to habit. Similarly, as you will soon see, it may lead to a useful interpretation of hypnotism and suggestion. Of course we can make other classifications which would be just as serviceable. By any such means, so long as we work consistently, we can obtain a good conception of our mental processes. No matter what choice we make, the result must be interesting, because the subject-matter is interesting. And most people believe that the subject of this chapter is more than

interesting — that it is fascinating. It certainly explains many facts about the working of our minds that commonly are poorly understood or that even seem mysterious.

Have you ever noticed how a clever woman will by a tone or inflection of her voice get rid of a tiresome visitor? With pretended cordiality and affectation of regret she inquires whether he really *must* go, asserting that she has enjoyed his visit *so* much. As a matter of fact, her words imply far more than their usual, bare meaning. She really is not sorry that her visitor is about to depart, and on the contrary she desires his departure. Social conventionality requires her to express regret, but at the same time she suggests her real wish. The trick is innocent enough, and has the merit of politeness — that potent lubricant of the social machine. She obtains her effect more easily than she otherwise could, and at no expense of unpleasantness or bad feeling. Such methods are universally employed; and while they may not be admired, they certainly have the virtue of effectiveness. The implication carries the true meaning, and the suggestion by contrast

brings it out with practical clearness. Another instance of this device I saw in a drug store to-day. In the large drug stores in New York it is the custom to display a sign which requests patrons who wish to drink soda-water to buy checks for it before drinking. In the shop mentioned there was a sign which read: "Drink your soda-water first, buy your checks afterwards. We trust our customers." The suggested meaning was very plain: *other drug stores do not.* The proprietor attempts to score his point, but at the same time wishes to avoid the appearance of brutal frankness. In all likelihood he does not trust the public more than other business men, but he *suggests* that he does, and depends upon the suggestion to create a favorable impression in the minds of his patrons.

Such methods work upon that part of our personality that is slightly below the surface of the fully conscious. The whole body of consciousness may be divided into many layers, the uppermost of which is the only one that we actively take into account. In our waking time this uppermost layer is founded upon impressions which are made on our minds in a fairly clear

fashion. But at the same time a throng of other impressions or recollections of them are working upon us. As we go from one layer down to another, we take less and less cognizance of the corresponding impressions. Nevertheless the impressions in their relative degrees are there, and at the proper time they come to the surface. Thus, the proprietor of the drug shop knew that all persons as a rule have in their mind a more or less remote idea of the possible dishonesty of tradesmen. He makes a direct impression on the customer's mind that in this one shop fair dealing is the rule; and by contrast he attempts to suggest that in other shops the same rule does not prevail. A more dignified example exists in Mark Antony's speech to the Roman populace at Cæsar's funeral. He begins to speak after Brutus has made a strong impression upon the citizens. Antony dares not openly deny Brutus' statements, and in the first part of his oration he praises the assassins; soon by implication he suggests the idea of wrong, of treachery, of self-seeking. He continues to state that Brutus and his fellow conspirators are "honorable men," but at the same time suggests reasons to doubt

their honor. He pursues this course farther and farther, and repeats the suggestion so often that the lower layer of consciousness becomes strongly emphasized and displaces the former fully conscious idea. The process has been so gradual that suggestion rapidly turns into conviction.

This behavior of a crowd is a very striking thing, and it can be seen repeatedly at any public meeting. An orator of reputation is about to speak; he has some admirers and adherents in the audience, and their enthusiasm is very decided. They speak of his many excellences, become excited, cheer every mention of his name. The other auditors feel by implication that the orator must be a remarkable person, worthy of admiration, and that — so long as they possess discrimination — they also must admire him. Their emotion increases progressively, and every bit of praise and plaudit augments it. The managers of the meeting have a practical knowledge of this; they appoint preliminary speakers who must recite the great man's virtues. Every five minutes increase the enthusiasm, until when the orator appears he is

greeted with a storm of applause. As a matter of fact most of the audience do not really know why they are excited, many may not at all understand the principles which the orator represents, but nevertheless they are carried away in the current of suggestion and cannot help showing their feeling.

A curious manifestation of enthusiasm lies in its manner of increase. As a crowd increases, its possibilities of being carried away by emotions grow by multiplication rather than by addition. And when a mob collects, it is capable of acts which its individual members could never encompass. The emotions of one work upon those of another, who in return affects the first, until the mob comes to have the unbridled passions of animals. This is the manner in which the atrocities of lynching take place, this is how quiet and ordinarily rational citizens participate in the eccentric crudities of election parades and celebrations, and this is how the stupid violence of strikes occurs. Every one of you must have noticed how differently you act under emotional excitement in the company of a crowd of fellows than when alone. You become easily "enthused,"

you speak loudly and dramatically, you engage in plans and schemes which in solitary moments you might regard as silly or reckless or impossible. And every such emotional glow should be closely scrutinized. Its ultimate results may be good or bad; nevertheless it can hardly be trusted, it is essentially unreliable, it is not the offspring of your real convictions, for it is largely the product of suggestion.

There is another common and characteristic effect of suggestion, occurring in religious movements — such as revivals, camp-meetings, and similar occasions — that ought to be regarded in the same critical manner. Under such circumstances ordinary people whose general lives are commonplace and scarcely emotional, work each other up to a high pitch of religious excitement. One man begins to speak. He recounts his religious experiences, how vicious he was before conversion, how fortunately reclaimed since that event, how good and merciful the Lord has been to him, how desirable and blessed is the condition of the convert. Little by little his excitement increases, he believes more and more fervently in his own statements, and communicates to his

hearers a similar warmth of emotion. They act in corresponding ways upon him and upon each other; they become enlivened, breathe as people do who labor under excitement, their faces take on an ecstatic expression, they have all the appearance of persons who have received a great conviction. Their reasoning faculty is for the time abolished, they are living in a world of overwrought emotion and suggestion. For that time or possibly for a long time afterward they may continue to feel this impulse, and they may to a greater or less extent mould their acts on this model. Such movements may take the most diverse forms: they may take the shape of the mediæval crusades that turned the world topsy-turvy; they may occur as one of the Rev. Mr. Simpson's meetings, where men and women contribute for some more or less indefinite object their money, horses, jewelry, even their clothing; they may appear in the shape of negro camp-meetings in the South which are characterized by wild frenzy, uncontrolled orgies, ridiculous antics. But the participants do not clearly see all this; the lower layers of their consciousness have been acted upon, stirred up, brought to the surface. For the

time being they are to all intents and purposes different persons from what they ordinarily are.

You may see another manifestation of this same power in the so-called Christian Science which is now having such wide influence in the United States and England. This is a belief that has wittily been called neither Christian nor scientific, which has been likened to the guinea-pig which is not a pig and does not come from Guinea. There is absolutely nothing new about this belief, which is founded upon a very poor interpretation of a familiar philosophy. The followers of "Mother" Eddy profess to believe that there is no matter — we simply have so-called phenomena. Therefore, there is no disease, no pain ; sin does not exist, decay does not exist, all is love, all health. Converts must go through certain formulæ every day, they must buy and read the "Mother's" book, they must repeatedly say to themselves and each other, when they are sick, that there is no pain, there is no sickness. The plan of the belief is to substitute for conscious conditions certain induced states of mind and body ; these states are decided on from the beginning, they are suggested to the believers with continued force and iteration, until they come to

represent — sometimes to a notable degree — the conscious state of mind. The process may at times be a useful one, although at other times fraught with the most serious danger.

Its usefulness depends upon the fact that human beings are susceptible to changes of mental condition, brought about by an infinity of attendant circumstances. Most, or at all events a large part, of these circumstances are more or less clearly suggestive. An environment of sadness suggests sadness, banishes joy; an environment of victory gives the atmosphere of triumph, keys us up to attack problems with a vigorous aggressiveness. Persons who are imaginative, who are easily swayed, who are hysterical, whose health is in a condition of unstable equilibrium, are poorly poised, and therefore are readily subject to such influences. These persons are especially liable to the disorders which we call functional, that are not the result of true, organic changes in the body. They often complain of pains and disabilities that have no better basis than imitation or a disordered imagination or some remote and not serious disorder. For them "Christian Science"

or "Mental Science" or "Faith Cure" is a good thing. The great wrong in the practice lies in its being used to combat real, organic disorders, in its ignorance of infection and infective diseases, and its consequent exposure of the whole community to the most serious dangers. This is far greater than the fact that it may easily be used by unscrupulous persons to impose upon the credulous and weak-minded for plainly evident reasons of gain.

The method, as well as its control over the believer's mind, has been used time and time again. The whole history of civilization is dotted here and there with startling examples of the effect of suggestion. The Delphic oracle of ancient Greece had its thousands of believers, who disposed of their lives and fortunes according to the demands of suggestion. Not many years ago a sharp New Englander, named Perkins, claimed to be able to cure diseases by metal rods which he called metallic tractors. He declared with the greatest emphasis that he had made these cures, convinced a number of people, of the sorts enumerated above, that they had been thus cured, used them as instances,

and soon he had a great following of the deluded, both here and abroad, who gave him much adulation and money. Of course the bubble eventually broke, and the world regained its self-control for a time. It recovered from its acute attack of suggestion, but without having learned the lesson that it taught. Dozens of instances can be cited, such as financial crazes and panics, the seeing of visions and portents, the cure of disease by touch, relics, amulets, or the wearing of certain rings. And almost every cleverly worded advertisement aims to profit by the same faculty.

Now you see that there is no limit to the legitimate as well as the illegitimate uses of suggestion. Every teacher uses it, in proportion to his skill, when he tries to lead his pupils instead of driving them. Every time he begins the explanation of a difficult problem by saying that it is easy, that it has a bad but undeserved reputation, that a very little thought will make the whole matter clear, he is using suggestion and at the same time is skilfully leading his pupils over a rough road. He is then a practical psychologist. Every time a skilled physician en-

courages his patient, asseverates his implicit belief that the patient will recover, obtains practical demonstrations of recovery by medical means and uses them to point the truth of his statements, he is using suggestion, and using it rightly. He also is a practical psychologist, who may do much good in the world.

Indeed, every one of us may use similar methods, and on some occasion or other most of us do. Some of us really use suggestion on ourselves, and thereby produce states of mind that appear to be caused by outside circumstances. Often by assuming a certain expression of face, a certain carriage of the body, or a certain tone of voice we may suggest and produce corresponding conditions of mind. For it is a psychological fact that the connection between mental impulses and their motor expression is close enough for the rise of one to cause the rise of the other. Certain great actors have said that during a performance they regularly felt in an acute degree the emotion they were portraying. And it is an undoubted fact that every one of us can use a similar device in ordinary life. If we as a matter of routine con-

trive to have a cheerful expression of countenance, we must end by having a cheerful mood. If we persist in making our manner and gait both brisk and energetic, we must perforce absorb briskness and energy in our character. A doleful tone of voice suggests and produces sorrow, just as surely as a blithe note makes for joyousness. The best proof of this is that others easily recognize these effects and respond to them, in the same way that we respond to the signs of similar moods in them. In the same way that we can induce desirable states of mind, we can to a reasonable extent banish undesirable ones. There is thus the greatest value in holding ourselves rigorously from any sign or expression of fear, double-dealing, deceit, falseness in word or deed. We should have no faith in the possibility of divorcing the inner from the outer life, of saying and doing one thing while intending another. It is wise to treat other people in the same fashion, to estimate their words and deeds at their face values rather than according to an estimate which we may be charitable or uncharitable enough to make.

This faculty of suggestion has a wider appli-

cation than one would at first believe. It influences not only states of mind where we are only partially cognizant of what is taking place, but also it is at the bottom of some conditions where our full consciousness has practically been lost. One of the best examples of this lies in hypnotism. Commonly we are apt to think of hypnotism (or mesmerism or magnetic trance, as it is sometimes called) as if it were some occult and mysterious thing which had a close connection with the evil powers of darkness. In reality its only element of mystery lies in our imperfect acquaintance with all of its possible phases and manifestations. It is, of course, no easy thing to get beyond this partial ignorance, for even with our present knowledge we have difficulty in understanding the whole matter in a rational fashion. The sensible thing to do is to regard hypnotism as sleep, an artificially produced sleep which may be controlled and manipulated according to our acquaintance with it. In ordinary sleep with its usual environment, we put ourselves at rest, apart from the usual circumstances of activity, we remove as far as possible the usual impulses and mental pictures of active life, and

gradually the tense strain of consciousness dissolves. In this gradual way our ideas become fitful, wandering, fragmentary. That is the freeing of one or another bit of sub-consciousness from one or another layer. If our exhaustion is great enough we finally lose sight of every picture, the fragments of consciousness and sub-consciousness have not force enough to hold any part of our attention, and then we say that we are sleeping soundly. We do not mean that mental action is entirely lost, is entirely beyond the influence of physical conditions; we merely mean that the mind is taking a rest, is more or less free from the strain of attention, that it may possibly be compared with the heart action in its rest between beats.

Just as certainly we know that the mind may and does retain some faculty of action, though that action is not under our control. The single fact of dreams proves this. By dreaming we mean the presentation to the mind of disconnected, fragmentary pictures which have no necessary thread of sequence. There is no effort of the attention and of the will to hold them together, to keep experiences and the memories of them in their

right sequence, to maintain any sort of order between the various layers of consciousness. Indeed, one of the main features of sleeping and dreaming is the elimination of the topmost layer and the consequent lack of self-control. All sorts of experiences and thoughts, things that we love and hate, things that we have sought and avoided, go thronging in a topsy-turvy manner through our brains. Every one goes through much the same thing, and even animals are not debarred from it.

The critical part of hypnotism, then, is the production of a state of rest and quiet, the breaking up of the active quality of consciousness, and the calling to the surface of various degrees of sub-consciousness. This does not at all seem mysterious, and it really is not. Moreover, we can prove the logical character of the whole process by employing simple means to satisfy these conditions, and then as a rule we shall find an entirely successful issue. Almost everybody can be hypnotized, and even animals are not at all exempt. If a chicken's head is held to the floor and two white lines are drawn from the eyes to a point in front of the bill, one can without

much difficulty obtain some of the important symptoms of hypnosis.

With human beings a number of different methods are possible, and the elaborate passes and flourishes, which so often are made a part of the procedure, have very little essential use outside of the effect of suggestion. To carry out the simplest and most widely applicable system the room should be quiet, the subject must be seated at rest in a chair; he must be instructed to free himself from all mental tension, "to think of nothing." The next step is to hold before him and above the level of his eyes some bright object at which he must gaze intently. In a short time the muscles of his eyes will grow weary, his lids will close, he will be ready to drop off into sleep. During this time the operator should be speaking to him soothingly and monotonously, describing the various stages of sleepiness, telling him that his lids are drooping, that his eyes are growing smaller and smaller, that sleep is stealing over him more and more, that he cannot resist it, that finally — as the eyes close — he *is* asleep.

Such a method, as you can easily see, is merely

one of suggestion. In fact, some operators use nothing more than a general spoken formula which is designed to suggest the idea of sleep. And if any such method is skilfully carried out, very few persons can resist it. The exceptions, for the most part, are lunatics, children, and very nervous persons; in other words, those who are unable to concentrate or control their attention from wandering. The common idea that a strong mind can always hypnotize a weaker one is totally wrong. There is no question of relative strength involved. The main difference between operators consists in their various degrees of authority, of self-confidence, of experience. This factor of experience is a very important one to both operator and subject. A person who has been hypnotized falls into a trance much more easily than one who is about to make his first trial. And after the subject has become used to the experience, he can more and more easily be put under the influence. With sufficient practice any prearranged sign, a word, a touch, a glance, an odor, a sound, will serve as a signal to cause him to sleep.

You can now begin to see what a tremendous

power may be wielded by the simple fact of suggestion. Indeed, the wonder is that so simple a means can bring about such startling results. But we have not finished the story of what it can do. We can suggest to the hypnotic subject the most remarkable and difficult feats, and unless they are entirely without the range of human possibility, he will successfully accomplish them. Suggest to him that he will feel no pain, and you can with impunity perform an ordinary surgical operation upon him. Show him one of a pack of blank cards, shuffle them all together, and with entire accuracy he will pick out the original card. Tell him that a glass of wine will nauseate him, and he will be unable to drink it. Assure him that he must arise every morning for a week at five o'clock, and he will be unable to stop in bed after that hour. In short, his whole mental and physical organization may be manipulated to a remarkable extent, especially if the suggestions fall within the list of normal ones, and not among those — such as crime — to which his whole nature and training are repugnant.

The main fact about suggestion in general is

that a noteworthy amount of control may be brought into play whose range of influence will color our whole lives. There is the greatest necessity for deciding upon what we believe to be the right and the wise thing to do and be, for contemplating this thing with all possible intentness, for keeping it before our mind's eye as constantly as may be. We need suggestion to help us, to set a standard, to act as an encourager. The rightly selected suggestion has the merit of continual adaptation to an organism that is developing. The more we grow, the greater is the range of the suggested standard. Suppose we set a certain mark of truthfulness — that grandest of virtues — as the desired condition: then the more we contemplate it, reach after it, grow toward it, the finer must it seem to be, the wider must its scope appear, the more necessary must it become to our spiritual and intellectual peace. Or, again, suppose we set for ourselves the suggestion of tenacity of purpose. Then, when we have examined the determination in all its aspects and from every standpoint, when we have recognized how it enters into all the big and little affairs of life, when

we have seen how it must not for a single moment be allowed to slip away from us, then I say we shall find increasing use for each little application of it, we shall find it affecting our work, our play, our loves, our ambitions. It will spread out until not an impulse of our lives is allowed to wander in a random path, until all our energies are directed and held down to the ultimate purpose as a strong, clear-sighted driver holds a swift horse to his course.

After all is said, this is what we mean by an ideal. Commonly the phrase is understood as meaning some impractical and intangible "counsel of perfection," at which one may look as a traveller gazes at a beautiful rainbow that is far away, never to be reached, likely at any moment to fade away. That is the conception of the man who is not in earnest. The truly purposeful man has a different manner of proceeding. He realizes that this thing is good and that bad, that the good thing may be hard to get, but is all the more profitable from the difficulty of attainment. He wants it and wants it badly, he wants it all the time, he wants it so much that he will sacrifice ease and comfort and

the quiet peace of his body, if only he can obtain it. Not a day passes without some thought being given to it, without some effort being made to attain it. And before very long his work begins to come true, little by little the power that he longed for falls upon him like a freshening breeze. Even without his full recognition, he has been drawing near to his ideal, his suggested condition. Then he sees as never before that anything, within human limits, is possible for the man who wants it hard enough.

With all our imperfections we have this one fine endowment: the possibility of indefinite development, of unlimited growth in whatever normal direction we may select. The outcome depends upon the amount of force which we put into our efforts, and not upon outside conditions.

Cyrus W. Field devoted many years of his life and a considerable part of his fortune to working out a plan which most men thought chimerical. He thought about it by day, and dreamed about it by night. He had a glorious vision of joining Europe and America by an electric cable, a thing which he was told was absolutely impos-

sible. He tried it, and failed. He tried it again and again, and yet he failed. And all this time he saw the vision, and by it he was held up to his standard. When success came at last, he was less surprised than most other persons; for success was the only thing he had allowed himself to contemplate. Opportunities for improvement always have been, and are, present, but they wear the cap of invisibility for the man of weak resolve and deficient concentration. But to the man of ideals they stand as plain as mountains, as easily seen as a tree swaying in the wind. The difference is not in them, for they are ever the same; it is in the man himself, in his power of self-suggestion.

CHAPTER IX

Imagination, the Enlightener

The subject of this chapter is exceedingly attractive. In certain ways it may seem to involve a phase of mental action that is somewhat different from what we have been considering. That appearance would be due to lack of familiarity with the question; for there is the same connection that we saw in the previous chapters. (The idea of the imagination grows out of that of memory, in the same way that memory grows out of attention.) And you will find similar underlying ideas of natural endowment, physical constitution, and habitual use affecting all of them. Once again I must remind you that the life of the brain is an entity, and that its manifestations seem more distinct when we analyze them than when we see their results in ordinary work and play. Imagination demonstrates this thoroughly; for

although its effects are always with us, nevertheless we are usually unable to recognize them. As you will soon see, imagination is not a state of analysis, but rather of synthesis. And now we shall try to find out how this may be.

Have you ever thought how misty most persons' ideas are about the subject of imagination? They use the word in various meanings, and often without a good understanding of what it implies, or of all the benefits that might accrue from the wise cultivation of its normal growth. For instance, a man is telling about an accident and the great crowd that collected. "A thousand people must have flocked to the place in about five minutes," he declares. "What," you exclaim, "a thousand!" "Well," he answers, "I didn't count them, but I imagine there must have been that many." Again, you may see a fine picture or statue, or hear a fine piece of music; and whatever it may be, you speak of it as a work of the imagination. As another instance, take the case of a political canard. In the height of a political campaign you read an unfavorable story about your candidate or his ticket. You toss the paper aside, and say that

the reporter's imagination must have been working especially hard. Such examples could easily be multiplied, and each example would seem nothing more than an ordinary expression.

Now, if we want to define the matter clearly we should say that imagination is a sort of memory, the power of producing over again certain impressions that once have been felt. You cannot imagine an absolutely new thing, you cannot make an image that is absolutely new and original in all parts. The parts may have been changed somewhat, but essentially they are the same things; or you may combine them somewhat differently from what they formerly were. A person who has been blind from his birth cannot by any means imagine what color is, and whatever acquaintance he has with the world of sight has come through his other senses. Thus, he may have some conception of the form of a chair or a dog because he may have felt it with his hands, but that result is quite different from what he gets by sight. And in the rare cases where a congenitally blind person obtains sight through a surgical operation, the impressions which he receives through his eyes are

very different from those which he formerly had, and he must accumulate a new and composite set.

Even in a new invention, although it may be one of the epoch-making devices, the same thing holds true. James Watt may be called the inventor of the steam engine, and he made his discovery while repairing a model of the Newcomen engine, an atmospheric machine in which steam was used to produce by condensation a vacuum in a cylinder. He knew that steam had tremendous power when properly applied. He likewise knew that power could be manipulated to turn a wheel. The finished steam engine was then a combination of these two things, plus the mechanical ingenuity of getting rid of technical difficulties. A similar interpretation can be given to Morse's discovery of the electric telegraph. He came to make his discovery by hearing about a method, famous in his time, of making flashes by means of the magnet. He knew that words and letters could be represented by flashes of light or by sounds just as well as by written characters. Here again a great part of the work consisted in overcoming mechanical difficulties. One truth, however, is

apparent in both cases, that the new idea lay in the combination of certain familiar impressions.

The next step in learning about imagination consists in repetition of the original idea, but at various times under different conditions. This would be somewhat on the plan of the composite photograph. Here a number of persons place themselves in rapid succession before a camera. The common parts of their faces, the parts that are alike in all, become accented again and again, and thus are brought out clearly. The individual parts have but little opportunity to impress themselves on the plate, and therefore are seen in a faint, hazy way. In other words, the composite photograph gives a "general idea" of several persons or things. And that is what imagination does. It takes few or many impressions, thoughts, or things, puts them together, connects them by any common factors, and thus obtains new, or fanciful, or startling, or beautiful results. In a certain way this process is indefinite, it dislikes hard and fast distinctions, it does not separate elements sharply. It is a method of general combination, often putting together things that seemingly have little or no relation with each other.

We can learn still more about it by noticing under what conditions it most frequently occurs. And a very little searching will show us that children, more than adults, have this faculty. This is really what we should expect, for children know least about the settled order of things, have the least experience, take least account of the laws of cause and effect. They are apt to regard their impressions in a more or less misty fashion, their mental eyes do not focus sharply; for all that is the result of practice, necessity, and experience. Following out the same idea, we should suppose that women are more imaginative than men; and this, also, examination shows to be true. Here once more the reason doubtless is deficient practice, necessity, and experience; for as far as we know there is no other good reason why women should be more fanciful than men. We can see the reasonableness of such a belief by the fact that men differ among themselves in the degree of their imagination. Those men whose conditions of work and thinking are least fixed ought to have the most luxuriant faculty. And, on the other hand, men whose habit of work and thought is slow, cau-

tious, and careful should have least imagination. This class would be represented by scientists, who are well known to be markedly deficient in this respect.

Such men are not necessarily born without imagination; they merely grow out of the way of having "general ideas." And the more sedulously they follow out their particular form of thinking, the more must their power of imagination dwindle away. Such a condition fits the requirements of their case, for they have little need of the faculty. The so-called practical man, the inventor, and the artist, form an entirely different group, and to them it is an absolute necessity. Take the merchant, for example. To him business imagination stands for foresight and judgment. Each season the requirements of his trade change. New styles are constantly being originated, and he must know how to choose from among them. Each season the taste of the public varies from what it formerly was. And each season there are fluctuations in financial conditions, in the amount of money the public is able to spend, in the rate of credits and in loans that the banks make. All these things cannot be reduced to a

mathematical formula, and they cannot be reckoned upon except in a very broad way. Therefore the man who is able to put all these factors together in the right way, who is able to find out the elements that are common to all, who, in short, is able to make a composite photograph of them, is the merchant who is going to be successful.

In the same way other forms of mental activity respond to such control. When a playwright works out a drama, he does not and cannot do it in one great burst of genius, without preparation or acquaintance with his subject. Rather, he revolves it in his mind, consciously or unconsciously; he obtains certain general ideas of incidents, characters, and progression of dramatic action. This brings in all kinds of usual and unusual relationships, which we call imaginative effects. That is how similes and metaphors and figures of speech came to exist. When Shakspere says,

> "The quality of mercy is not strain'd;
> It droppeth, as the gentle rain from heaven
> Upon the place beneath,"

he has been combining different ideas by their common parts, he has been making a sort of composite photograph of mercy, of using a thing wisely and

kindly rather than with violence, of refreshing rain, and so on. He continues the same process, bringing in various things that have some aspect which is similar to an aspect of mercy. He might have proceeded in this manner to an indefinite extent, for there are very few things whose nature does not permit connection with other things in the world.

Thus, as you can easily see, the wider our knowledge of things, the better ought our imaginations to be. The man who remains at his desk and attempts to evolve imaginative work from nothing but his own contemplation is going to make a heavy piece of work, for there can be no buoyancy or life to it. But if he mixes with the world of men as well as books, if he obtains as many different experiences as possible, if he provides for himself as many standpoints as possible, his efforts must be vastly more successful. By such means he gives the work freshness, spontaneity, breadth of vision. What is more, he should not confine himself to any one set of experiences: the painter ought to know something more than painting, the writer more than literature, the merchant more than commerce. For if each one keeps himself too

closely to his special department, he will assuredly lose a large part of its attractiveness, and grow narrow and pedantic.

This idea does not in any way interfere with a plan of thoroughness. Whatever your work may be, do it well, attend to every detail, make yourself familiar with every part of it. That is the first law of work, and there must be no exception to it. At the same time there is no necessity for extreme specialization, to live so closely within four walls that you do not see anything of the world without. Each one of us, no matter what may be the nature and scope of his occupation, has opportunities for getting out into the world, for seeing men and things, for reading, for looking at pictures and statues, for hearing music, for some sort of travel. This is what we mean when we speak of a general education, of the broadening effect of society and travelling. This is why the really intelligent man is always asking questions, is always finding interesting views in the ever changing series of big and little things all about him. The wider his knowledge becomes, the more relations does he find between seemingly diverse things, the more common elements are

there in all his experiences. He is ever making composite photographs that help him to hold broad and liberal views.

All men's imaginations do not confine themselves to the same form. The familiar aphorism, "many men are of many minds," might be paraphrased by saying, "many men are of many imaginations." And you do not need to exert much effort to see how true this is. By this time you know that natural endowment has a certain share in fixing the grooves in which the mind works; and also you know that the environment has an equally important part to play. Now, in the same way that animals have certain "centres" largely developed and therefore have their lives and activities directed accordingly, so men may have a greater or smaller development of certain "centres," and correspondingly their lives will be influenced. In addition they have the factor of artificial environment, which animals commonly lack, to emphasize or diminish their congenital tendencies. The man whose visual centre is large has ability to see things well and keenly, and he uses and depends upon this faculty more than his neighbor who has it in less

degree. Another man who is gifted with an unusual speech centre turns to expression by means of words more readily than the other. In all likelihood he will be more skilled in this direction. And in both cases the environment of the men will modify in one way or another these respective gifts.

Such a natural constitution has a great deal to say about the particular tendency of the imagination. Whoever has the standpoint of the visual centre will see various situations spread out before him as if they were on a stage in the theatre. He has the dramatic point of view, and his composite photographs show the spectacular element most clearly. That is how the famous French dramatist, Scribe, came to say: "Do you know where I am when I write a piece? In the middle of the parterre." It was no effort for him to write plays, for the action of his imagination put things together in that form. Similarly the literary man regards his thoughts and feelings from the viewpoint of word-expression. It would be very hard for him to imagine himself viewing everything from "the middle of the parterre"; just as hard, in fact, as it would

be for the inventor to have the word-view. The constructive ability of the latter is quite different from the characteristics of the first two; and it is somewhat rare to find a man gifted in several directions.

These gifts are so absolute that even under the most disadvantageous circumstances they work their way to the surface. You cannot entirely obliterate them, and the most you can accomplish is to modify them. Therefore in a musical genius like Beethoven the centre of sound, of music construction, was so large that even when he became deaf he continued to compose, and to hear plainly within his mind, the wonderful pieces of music that have made him immortal. The great Giotto, when no more than a poor shepherd boy, drew on a piece of slate pictures which were so good that the painter Cimabue took him into his studio. This evidence of Giotto's natural endowment was so marked that we are not a whit surprised at his accomplishing greater deeds than his master. His imagination made everything appear to him pictorially, he viewed the whole world from the standpoint of lines and forms. The painter, Millais, was so gifted

in similar ways that he entered the royal academy when he was only eleven years old. John Stuart Mill was so largely endowed, but in another direction, that he became a linguist and an able author at an early age.

On the other hand, it is fully as possible that, on account of slow development or the effects of training in some other direction, the working of the imagination may not attain its full power until a comparatively late date. The mind very fortunately has that much elasticity, and permits a certain amount of handling with practical impunity. Tschaikowsky, the greatest composer of recent times, began his superb works long after the usual starting point in musicians. Most of these men do not wait for general intellectual maturity, for marked skill in musical composition is not necessarily joined to a broad mental growth. He spent his early years at school, and later on he held a position in the Russian Department of Justice. And only after he had enough experience to recognize the nature of his mental composite photographs did he engage in music as a profession. Another and more striking example may be cited in the case of the great

painter, Puvis de Chavannes, whose principal work began only in middle age. But when he was fully started in the right course, he soon overtook and passed his competitors.

All these examples neglect one of the main manifestations of imagination in giving a background to our ordinary life, in imparting the peculiar and characteristic quality to the personality of each one of us, in making greater or less the ordinary impulses of ordinary life. You know how inevitable it is that various persons should be differently affected by any one set of circumstances. The reason of this is largely the result of the faculty in question. One person, let us call him John, has a certain mental make-up, a certain set of experiences and influences. His friend, James, differs from him in all points. The power of imagination in John's case must necessarily bring about results that are peculiar to him. The common points in his mental photographs must, of course, be different from those of James, and they go very far to make up his personality. The effects of imagination are constantly being translated into terms of feeling and action, and the person shows his particular char-

acteristics without at all having conscious knowledge of their origin.

It is in this way that we come to speak of being carried away by the imagination. "The current of our thought is colored by that emotion," and necessarily shows increasing effects of its influence. Suppose our imagination runs in the way of joyfulness. When any given event takes place, it immediately receives a frame or setting of pleasurable or joyful surroundings. Its natural hue is colored just as deeply as our imagination permits, and the process goes on until it is checked by the will, by the failure of its own vitality, or any equally efficient means. You can see the truth of this in the occurrences of everyday life. A child walks along the road at evening, and on account of bad training, he takes a shadow to be some sort of ghost or wild animal. Naturally he is immediately smitten with fear. The imagination clusters about this impulse, intensifies it in all directions. It straightway finds out all the common points in his impressions, and makes a picture of frightfulness. This goes on until everything about him is colored by fear, and he falls into

the ordinary condition of panic. We constantly see similar conditions in untrained or uncontrolled minds, where they are forced to act ridiculously, extravagantly, and so continue until they are brought up with a round turn by the superior force of some other person's will or reason.

Even in optical delusions and feats of legerdemain we can see the effects of imagination. The operator starts out with some familiar motion or the presentation of some familiar object. You expect the motion to continue in a certain way or the object to act in some regular fashion. Your attention is thus occupied, and your imagination carries out the impression which the operator desires. All this time he is taking advantage of you and doing the things that create your astonishment. In a somewhat similar way we are undecided whether a sound is coming to or going from us; and the decision is usually made, before we have positive evidence, by what we desire. If you touch an object that you have reason to believe is hot, you will pull your hand away in much the same fashion as if you really were being burned. The number of examples

is endless, and shows the countless ways in which you are being influenced all the time.

But if you are careful to train your imagination carefully, if you endeavor always to keep it healthy and under the reasonable control of the will, it ought to be a source of living joy. You must be ever mindful that your brain needs to be fed, somewhat on the plan that your body is nourished. The food is the widest range of normal experience or of knowledge that is within your reach. Your fancy must have material to build with, and the edifices it makes cannot be finer than this material. Pick your companions from the worthiest persons in your circle; and when you have made a friend give him the best that is in you. By this means you are sure to have a sympathetic auditor, and the effort will make the beginning of a process which increases with its own growth. At the same time you will be encouraging him to show you his best side, and this again will encourage and stimulate you. Try to see different kinds of people, for no one class has a monopoly of worthiness, and each class has its excellences. See them all, and use your selective faculty to

pick out the best that is in them. Be a cosmopolitan in the true sense.

Read as many good books as you can, and read them slowly. They are a fertile ground upon which imagination grows. They represent the processes of other minds that are the equals of yours and possibly the superiors. See as many paintings and statues as you can, but never hasten over them. You will obtain more benefit from contemplating one thoughtfully and carefully than a cursory view of thousands can give you. Look at them lovingly and reverently, for they represent the joys, the sorrows, the hopes, and the longings of gifted men. Do not have your coldly critical faculty always with you; rather it is wise to try to absorb the atmosphere which they exhale, to taste the particular flavor of each. Take for granted that the artist has a mind and a heart, and that his work stands for something admirable. In the same spirit I should want you to listen to music. It makes no difference whether your personal liking inclines to popular or classical compositions. Put yourself faithfully and plainly in the way of the emotion that the composer seeks to por-

tray; and before long your imagination will begin to stretch itself out in long lines that lead to a rarer world than that which the commonplaceness and sordidness of ordinary life can give.

Try to acquire some familiarity with different occupations and methods of livelihood. Each one of them has its valuable parts, and contains facts which the imagination can absorb and use to future advantage. Even such ordinary things as a dovetailed joint, the welding of metals, the splicing of ropes, the making of an electric circuit, the draining of a swamp, have their imaginative worth. And the mind that is well stored with them has much to rely upon for later use and pleasure. These things are as valuable as the arts and professions; they can give as permanent returns. They all belong in the category of human activities, and therefore they deserve to be investigated and considered.

By all means endeavor to have a good acquaintance with nature. Observe and read as much as you can about animals and insects, about trees and plants, about rivers and clouds and mountains. These things, both great and

small, are everlastingly real, they are always fresh. A jaded mind turns to them as the parched throat longs for water. All their secrets have never been found out, and all their beauty has never been fathomed. The more you see of them, the richer will your mind be. They have an endless variety of use and ornament, which lies open only to the man who loves them, who contemplates them with humility and fidelity. There is no better nourishment for your powers of imagination than that which they give, and there is no surer road to maturity and ripeness of intellect than that which they indicate.

And above all, keep your thoughts and your secret contemplations sweet and clean. Refuse absolutely to think of vicious things, because such things make a fertile culture ground for a diseased imagination. We all have a large power of choice in this respect, and we are responsible for the use to which we put it. Purity of thought is practically synonymous with purity of life; and the unsaid things are the real index of character. He who regards himself as the keeper of his actual and potential powers, who feels accountable for all he is, who pitches his life on a high plane

and refuses to soil himself, is the truly admirable man. He lives in a world of beauty, to him the world is a good place.

> "Do what he will, he cannot realize
> Half he conceives — the glorious vision flies.
> Go where he may, he cannot hope to find
> The Truth, the Beauty pictured in his mind."

Such a life is open to all of you, and the choice of it depends upon factors that are within your control; and among them imagination is not the least.

CHAPTER X

The Emotions and their Education

From imagination to the emotions is not a great step; and the standpoint that gives you a good view of one will unroll the other before your eyes. Of the two subjects the emotions in all likelihood have the wider scope of action, since they constitute a very large part of our intimate and private lives. They rest upon a foundation of instincts, and therefore represent much of the natural man. For this reason, if for no other, we should give them the closest attention and supervision in order to insure the greatest possible amount of growth and control.

When you stop to realize what a large part of our waking life our emotions constitute, you will be highly impressed by their importance. For impulses that take up a great portion of our total activity, and control almost entirely our pleasures and pains, are assuredly worthy of most careful

consideration. Moreover, if we see a method of controlling these impulses, of increasing the pleasures and decreasing the pains, our interest immediately becomes excited because our present and future welfare is involved. This is the reason why the subject of emotions always attracts the attention, and why it always repays consideration. Such things as fear and rage, love and hate, reverence and cynicism, the recognition and the lack of recognition of beauty, pride and humility, are among the biggest facts of life. And whoever wishes to have a hand in the growth and control of his mind ought to know something of the principles that underlie them.

Now, in the very first place, you must get rid of the idea that emotions occur by themselves, that they come and go in an irresponsible fashion, and that their control matures with age whether you attend to the matter or not. On the contrary, they never occur by themselves, they always accompany certain bodily acts and conditions, and you acquire control of them by distinct efforts of purpose and will. You cannot have an emotion without the physical part of its accompaniment, for the body must be affected before we can have

the corresponding emotion. Of course, you may by practice control or modify the expression of the emotion; but the modifying is no more than partial, and the great facts of the expression remain. In this, as in every other fact in the world, something cannot come from nothing; the cause and effect are there, if we only have enough clearness of sight to see them.

You are apt to say that the whole matter is very simple: that as soon as we see cause for having an emotion, we have it, and then we show it. That seems natural enough, but in all likelihood it is wrong. Doubtless you would say that, having lost a prized book and therefore feeling sorrowful, your face drooped; that, having seen a beautiful picture and being impressed by its loveliness, your expression showed your admiration; that, having seen a rival and hating him, you clenched your hands and scowled. Again you certainly would be wrong. The truth lies in turning things about: you lose the book, your face droops, and therefore you feel sorrow; you see the picture, you show your admiration, and therefore are impressed with its beauty; you see the rival, you clench your

hands and scowl, and therefore hate him. The point of view seems strange at first; but the more you consider it, the more reasonable does it appear. And the more you embody it as a fact of your own knowledge, the greater will be the benefit that you surely will derive from it.

The proofs are not as difficult as you might fancy. You know perfectly well that all sorts of things outside of you produce impressions upon your brain and body. That statement is so simple that it needs no explanation. Everything about you proves it. Everything that you see or hear or touch or taste affects you in great or small degree. If you put a drop of quinine on your tongue, your face puckers up and you feel the bitter taste. This is not because you are experienced and therefore know what to expect. If the quinine had been put on your tongue when you were only two days old, you would have pulled a face in the same way. A like truth holds good for any and every impression. For you cannot get an impression of any sort without having had some kind of effect produced upon some part of the body; and that effect must have occurred before or at the same

time as the impression. No delay, as you well know, occurs. The natural order of events is the happening, the perceiving, and finally the ordinary expressing which shows itself in what we call emotion.

Have you never noticed a person working himself into a fury? He shouts and rages and stamps; and the more contortions he goes through, the more violent he becomes. He is merely going through the physical acts of rage, and the feeling grows with the exaggeration of his physical motions. If you go into a church, belonging to a creed with which you are not at all identified, and out of respectful behavior you follow all the motions and genuflections of the service, you undoubtedly feel much the same religious fervor possess you as in your own church. This may possibly seem less real to you because you are apt unconsciously to say to yourself: "This is not *my* church, it is not the true religion," and so on. But even then, the main fact of religious emotion is there, and it has been aroused by the impressions which were made upon your senses, and it would appeal to others in exactly the same way.

That is why the so-called "tangible religions" make more headway with people at large than those which depend for their effect upon a purely intellectual force. Religious music, an elaborate service, rich vestments, processions, holy pictures, things like these have a great psychological value, for they turn the minds of the communicants in one unmistakable direction. There is very good reason for the fact that a warmly emotional religion has a surer and deeper hold upon men's hearts than a coldly intellectual one ever had or ever can have. The former appeals as directly to the mind as the latter does, but at the same time it appeals vastly more to the great elemental force of the senses. In doing so it uses entirely legitimate means, it shows a practical knowledge of the workings of the human mind, and for certain people belief in it is doubtless a profitable investment.

Have you ever attended the funeral of a person to whom while he lived you were indifferent? If you have taken advantage of such an opportunity, you must have noticed a number of men and women who attended from reasons of general respect, or curiosity, or the wish to show atten-

tion to living relatives of the deceased. These men and women, it may be taken for granted, are not at all oppressed by a feeling of sorrow when they enter the house or the church. But as the service progresses, and they see the unhappiness of the true mourners, they feel bound to show sympathy. They assume the attitude and expression of sorrow, they cast down their eyes, pull down the corners of their mouths, let their shoulders droop. The women in the same fashion of sympathy put their handkerchiefs to their eyes ; and before long all of them feel thoroughly unhappy and sorrow-stricken. They really are much in the position of actors in a theatre, who often feel the emotions, which they portray, in proportion to the reality of the imitation. A thoroughly fine actor, in passages of sorrow and misery, will commonly weep real tears, in passages of joy will laugh as heartily as if the scene were an actual event in his life. In the cases where this does not happen the player possibly is not sufficiently skilful, or he does not throw himself with sufficient earnestness into his work, or in very rare cases he has no more than a cold, intellectual conception of his part.

There is yet another interesting fact that is susceptible of much valuable research, if one wanted to investigate it thoroughly. The various expressions of emotions have good physiological reasons for their existence, and must have developed in remotely past times, as human beings gradually became evolved. Moreover, the elementary acts exist in the lower animals, and may easily be noticed, although these beasts are far below us in their emotional range. When we contract the eyelids in weeping, we protect the eyes against unduly great pressure. When we open the lids very widely in alarm and the iris dilates, we are acting as our primeval ancestors did when under similar circumstances they had need to have as large a vision as possible, to see as many enemies as possible. In rage we clench our teeth and show them by retracting our lips ; and this is just what carnivorous animals do under similar circumstances. Even lower orders, such as snakes and birds, are similarly disposed ; and Darwin comments on their behavior in his usual clear fashion : " Both the attackers and the attacked endeavor to make themselves as dreadful to each other as possible ; and both possess for this pur-

pose specialized means, which, oddly enough, are nearly the same in some of these cases. Finally we can see that if, on the one hand, those individual snakes, which were best able to frighten away their enemies, escaped best from being devoured; and if, on the other hand, those individuals of the attacking enemy survived in larger numbers which were the best fitted for the dangerous task of killing and devouring venomous snakes; — then in the one as in the other, beneficial variations, supposing the characters in question to vary, would commonly have been preserved through the survival of the fittest."

The meaning of all this is very plain. In man, as in animals, certain impressions produced certain effects, which we may call expression or the signs of emotion. The emotions themselves thereupon developed with or after these impressions. And man in his continual growth upward has come to have a wider and wider, a finer and finer, range of emotional feelings. In animals the emotions correspond to the instincts; and as instincts are purely physical reactions to outward circumstances, so the emotions must come under a similar heading. In man, however, there has

been an evolution, by which the number of his emotions has increased. Some of these additional ones, such as the appreciation of beauty, may be counted among the most valuable characteristics of his mental life. But no matter to what class they belong, they all have one origin, and they all may be made to teach the same lesson.

This lesson is not very hard to learn. If a certain demeanor precedes and evokes the emotion, then in order to decrease or increase any such feeling we must act accordingly. This is the purely theoretical part of the matter; and the practical part of it goes along hand in hand. Take, as an example, the usually difficult task of forming a correct appreciation of works of art. In only the rare cases can you find a proper standard of taste in your mind. As a matter of fact you do not know by your unaided taste whether a picture or a statue is good or bad. And if you continued to depend upon your untutored discrimination, you would in all likelihood make very little progress. But if, on the other hand, you ascertain from competent judges what the right standard is, if you go through a sufficiently long period of examining and admiring the best paintings and sculp-

ture, you must inevitably find the æsthetic emotion begin to bud and blossom in you. After that, the more you see of works of art, the more you will be able to get out of them. Your taste will continue to improve as you mature and your experience increases. And you will thus come to possess a large measure of the culture that is a necessary part of a ripened mind.

The more you think about this principle, the wider will you recognize its applications to common life to be. Possibly there is no part of the ordinary man's affairs that need such a close supervision as his domestic relations. We always take for granted that everybody has the right kind of feeling for his immediate relatives, his parents, his brothers and sisters, his sweetheart, or his children. But nevertheless from the test of experience the supposition is a forced one. It is a common thing to find such a man acting in ways that are careless, harsh, inconsiderate, if nothing worse. Such action diminishes the total sum of happiness of all concerned, it has no good excuse because it is absolutely unnecessary. The man might say that his intrinsic feeling is good even if the expression

of it is faulty. For my part I believe that he is wrong, that he is deceiving himself. He may have a certain amount of affection — mere living together would account for that. But he certainly does not possess the real, heart-felt love unless he shows it and acts it out in the numberless events of everyday life. The only way you can satisfy the demands of the situation, the only method by which you can be sure to have the right sort of affection for those who are connected with you, is by acting as if you really loved them all the time.

You cannot afford to neglect the little things, hoping to make it all right by the big ones. The little ones are ever with you, they give you the constant practice, they are ever helping to develop your emotion to its highest normal level. It is not a difficult thing to make your salutations morning and night, on entering and leaving the home, hearty and affectionate. Each time you do it heartily, you will feel a little thrill of affection whose brightening effect may last for hours. With increasing efforts you can make your tone and speech, your smile and expression of face, warm and loving. And the

more you do it, the greater must the amount of sunshine in your home be. A caress here and there, a gentle touch at all times, the giving of sympathy in both sorrow and joy, these are fine things. Everybody recognizes their value, and everybody would like to command them; for they make life easier and happier. And they are to be had for the trying. These are the things which make life worth living; far more so than attempts to become wealthy or successful. Many a man who has acquired both wealth and professional success has really failed; he may have had a certain amount of pleasure, not real happiness. But the man who has trained himself to have an affectionate, happy life at home cannot possibly be a failure, even if he is poor in money and mediocre in business accomplishments.

It would be highly profitable if we could go into the matter more minutely and thoroughly; but that would take up too much space. Likewise we should gain much if we had the opportunity to consider carefully the principal emotions that actuate us. A few of them, however, we must look at. One of the first that demands notice

is religion. Many people are apt to be diffident on this subject, although they should not be. It is a great force, one that is capable of much good or ill, and in this time of changing beliefs we all should examine ourselves fairly to find out where we stand. No truth can be lost in this process, for we come at truth by constant searching. As a matter of fact the question of which faith to adopt is really a secondary one; and no man has the ability or the right to make the decision for you. All the more highly developed faiths teach virtue and discourage vice, they all want you to be good and not bad, they all worship a deity as a heavenly father who is supposed to have an indefinite love for his erring children. There is enough value in every one of them, if their precepts are faithfully and honestly carried out, to lead you to as much of heaven as you can possibly deserve. They differ largely in respect of locality, of racial beginnings, of custom, of special forms, and the like distinctions. Good men have belonged to all of them, and all of them have harbored bad men.

The great question is not whether you are to

profess this or that religion, but whether you are to be *religious*. Have you the yearning to look up to a spiritual authority, do you feel yourself loose and wrecked without such a guide? Then you need religion, and you will continue to need it just as long as you continue to be uncontrolled. Do you long for a wide profession of charity, which will permit you in times of trouble or doubt to throw yourself upon the broad bosom of the mother-church, and there find consolation and rest? Then most decidedly you need to be religious. Do you want to worship with your neighbors and your friends, and do you feel rested and satisfied by the common service? Then religion will be a pleasant thing for you. Do you feel that without such direction you can have no sense of a mission in life, that the element of consecration would otherwise be totally lacking? Then you should avail yourself of the priestly blessing and all the good that it can bring you.

On the other hand, if you are a communicant from mere reasons of custom and habit, you are guilty of flaccidity of character. If you profess religion because it may help your social or busi-

ness success, you are cultivating a vicious deceit. If you attend service because you like the music, the formality, the pomp, and the circumstance, you are gratifying a taste that is not a whit better than delight in a theatre, the opera, or any other entertainment. Do you maintain membership in a church because you want others to feel the restraining force of religion while you secretly stand outside of control? Then you are practising rank insincerity. You must examine and question yourself as frankly and as plainly as may be. You have got to decide the matter for yourself: and no halting plan, no method of expediency and makeshifts can do more than hurt your self-respect. Nobody can make your decision for you, because each man has his own needs and desires, his own soiled past, and his own spotless future.

Now, when you have made your choice, stick to it honestly and openly. There is no intrinsic virtue in belief, nor is there an essential evil in doubt. You may be a thoroughly good man either as one of the faithful or one of the sceptics. Have the courage of your convictions bravely, modestly, tolerantly. Hold yourself open

to reasonable discussion from either side, for men's minds may change as their customs do. If you decide that you want to be religious, then you must be industrious in living up to your faith. Attend services, enter your church with a reverent step, and like the people of biblical days believe that the glory of the Lord is ready to envelop you like a cloud. Adopt the habits and customs of your creed with wholeheartedness, and accept its exhortation with the meekness that it of right demands. You must make all the motions of a believer, you must live the life of a believer, you must give yourself up to your religion as a true believer would, and then the actual belief will come to you. The religious emotion is subject to the same laws as every other emotion. Ignorance of them is apt in these days to tamper with your faith; knowledge of them will increase your respect for your belief, whatever that belief may be, and also for yourself as well.

The regulation of one emotion is very likely to lead to control of others; for their beginnings are often curiously related. Nevertheless, each impulse should be scrutinized separately,

and then handled according to its merits. Religious teaching regularly bids us to crush out pride, and the teaching is good under proper circumstances of discrimination. To take credit to yourself because you happen to have a grandfather or a great-grandfather, because your family has a fair amount of money, because you are comely or have a straight leg, because you have contrived to win a prize at school or find yourself able to run a hundred yards in ten seconds, is a pretty poor sort of thing. These characteristics have come to you through no special effort or excellence of personal improvement; they mean very little in themselves, for you can be good or bad whether you have them or have them not. But the pride that comes from self-respect is quite another matter. By all means think well of yourself, for you are more than "filthy rags." Indeed, if you were not, you would not be reading this book. Respect yourself because there are fine traits in you; they may be more or less hidden, but they are there. Respect them so much as to disdain a base thought or a shameful deed; prize yourself as you would a person who may

do fine things; care for yourself and force yourself to a virtuous practice, for you are capable of accomplishing high ends as well as low ones. By all means believe yourself to be the sort of man who is far above treachery, deceit, dishonesty, vacillation, weakness of moral fibre. Live out such a plan, and you cannot fail to embody the traits in your character. If you expect to absorb all the virtues from philosophic discourses, and then by some magic have them turn into great acts, you will have to wait a long while before your expectations are realized. But, on the other hand, if you start out by making a standard of practical action, if by an effort of will you do the things themselves, your ambition will surely justify itself. This sort of pride is one of the best helps that a man can have, since it is perfectly true that "the first object of virtuous Pride is rectitude, and the next independence."

Such a pride must be kept entirely separate from the love of praise and approbation. By the gateway of these things vanity enters; and if it is once given the right of way, modesty will be forced aside. Here would be a distinct falling

back, a loss of valuable progress. This longing for praise from others leads inevitably to vaunting one's self. Then a sort of mental blindness follows, an ignorance of what one is doing and what one is. That, by all means, you must avoid. You must sedulously cultivate the practice of scrutinizing your acts and motives; and when you see them fall below a sufficiently high standard, you must call a halt. Then comes the time of constructing your demeanor, of bearing yourself simply and plainly, of doing certain things for their own sake rather than for the applause which they call forth. When you have dropped into such an error of vanity, you may be sure that expediency and not principle has guided you into it. You have been longing for a little present praise, you have been seeking for some one to tickle your self-love; and in so far as you have done it, you have been losing one of the best holds upon yourself.

There is absolutely no excuse for such lapses from wise conduct; and we may go even farther and say that there is no good excuse for jealousy, anger, sulkiness, churlishness, and the whole list of unfavorable traits that are apt to mar our

youth. To be jealous is natural enough; indeed, it is instinctive. But we are constantly, in the attempt to educate ourselves, modifying natural and instinctive characteristics. Every one of you will unhesitatingly agree that such an emotion is both useless and vicious, that it cannot possibly cause any good result. It makes you petty, and at the same time it insults the loyalty or the judgment of the object of your jealousy. Of course, you agree to all that; but the great question is how to get the better of it. The answer is very simple and direct: get rid of it, act as if you did not for a moment grudge your friend or neighbor any piece of good fortune, of happiness, or of success that he could possibly win. Be strong and rigid in keeping suspicion from your mind, join in his praises, go to him and congratulate him heartily. If you do this with sufficient firmness and intensity, you will surely find that suspicion must fall away from you; it simply cannot abide in the face of such conduct. And as surely you will win an hitherto unknown amount of warm friendship and sturdy loyalty.

It is equally natural to become angry, especially if you are young and of a passionate,

untrained disposition. And, likewise, this emotion is altogether gratuitous. Each time you lose your temper, and forget the even restraint upon yourself that decent conduct demands, you are cementing a thoroughly harmful and very costly habit. The little occasions are the steps to big results; and the petty losses of patience, the trifling fits of irascibility are the gradations by which uncontrollable anger is reached. Such crudity of temper is the sign of the lowest form of character, the form that causes destruction of its own welfare and accumulates unhappiness for others. And the saddest part of the matter is that the suffering commonly falls heaviest upon those whose helplessness or affection makes them unable to defend themselves as aggressively as the occasion warrants. However, the effect, while excessively cruel to them, is fully as detrimental to you. You lose old friends and the chance of making new ones; your domestic and business welfare is diminished; and most of all your own character is kept in the primary stages of its growth. And all you need do in order to control this emotion is to apply sound psychological principles to the problem. Every one, in falling into a tem-

per, feels the first slip of his hold upon himself. At that moment he can check himself; but if that moment is allowed to pass without the right effort, the passion will increase by leaps and bounds. Each angry word or look is as tinder to a spark, until finally the unfortunate person has temporarily descended to the level of the beasts.

The early, crucial moment must be seized upon; the hasty word must be checked, the lowering look must be arrested. Stop for a moment, or look at yourself in the glass, or follow out the old piece of advice to count ten before you speak. If you do this faithfully, you will find yourself unable to continue in your anger, you may even find reason to laugh at the whole matter, and surely you will smile at the spectacle you present. And it is really remarkable how few checks it takes to break the backbone of a trait that seemingly is a part of your most intimate make-up. Before long you will find yourself the possessor of a charity that is infinitely better than the doling out of alms; you will come to have an evenness of mind and heart that can soften the rough places in life to

a noteworthy extent, while without effort it increases the pleasure, the happiness, and the chances for affection throughout life.

One of the most beautiful emotions that I know of is that feeling of the mind which creates an ever fresh longing for knowledge. I do not mean the sort of inquiry that a conscientious worker uses in preparing himself for a business or profession, but rather the quality of finding interesting material in everything about you, the conviction that the interest is there if only you can get at it. That is the first step toward having a well-stored mind. It makes no difference what the subject of inquiry is: a ditch that is making, an engine, the writing or binding of a book, the cooking of a meal, the painting of a picture, the delivery of an oration, the motion of the stars — in short, that keen, intelligent feeling which impels you to know about everything within your vision. If you have it, you cannot possibly become lonesome or world-weary; for you will ever keep the viewpoint of the healthy youth who is just stepping out into a new and unexplored world. The way to gain this is to ask questions, intelligent questions, the ones that bring out all sorts of cru-

cial details and personal experiences. Make up your mind, to start with, that no one set of things has a monopoly of worth or fascination. Take it for granted that the thing which you despise and find stupid some one else finds highly interesting. His opinion is in all likelihood as good as yours, possibly it may be much better. Try to view the thing as he does, put yourself in his frame of mind in regard to it, act as if you really were getting fun out of it. Before long you will have added something new to the list of interesting facts or pursuits, and your mental life will be so much the richer.

All in all, your emotions give you a wonderful opportunity for education, for developing the greatest good of which you are capable. They give happiness, content, peace of heart and mind — but only if you watch and guard them. Like fire, they are good servants but cruel masters. The choice of the matter lies with you. No one else can do the work in your stead any more than he can sleep for you or eat for you. You must do the struggling for yourself; and also remember that the reward accrues to you more than to anybody else.

CHAPTER XI

Reasoning, the Guide

This chapter means analysis, the dissecting and separating of ideas in order to find out how they are constructed. It is an advanced stage in our endeavor to understand how the mind works and how we may control its working. Heretofore we have been concerned with the processes of putting impressions together and then observing them as groups. And by easy steps we have now come to one of the highest mental functions. No absolutely new elements are involved, but rather a different method of handling the material with which we have been working. And your capability of extracting benefit from this new topic depends very largely upon the thoroughness with which you have mastered the previous chapters.

One of the surest signs of an untrained mind is its subjection to a blind credulity. This easy belief in anything and everything means an in-

ability to discriminate between the likely and the unlikely, the reasonable and the unreasonable, the true and the false. Such a mind observes and examines scarcely at all, it merely goes along in its stupid course, and is unable to accomplish any result outside of mere routine. It is the sort of mind that lends itself to superstition, the trait that acted as the prop and mainstay of mediæval savagery. In that age, as Lecky said, "Knowledge was made the bondslave of credulity; and those whose intellects were most shackled by prejudice were regarded as the wisest of mankind." The state of mind is one and the same whether it existed then or exists now. The only difference is one of opportunity and circumstance. Not only is the credulous person incapable of judgment, but he is more apt to believe falsehood than truth; for falsehood often hides itself in wondrous signs and portents, in tales that shock our logic. Such things are very sensational and impressive, and therefore they are sure to get a better hearing than the sober accounts of actuality and the simple, beautifully connected facts of reason.

On the other hand, the superior mind is naturally sceptical, not towards any one thing, but

towards everything. It does not pick out any one thing to doubt, it is not opposed to religion or art or politics or anything else. It merely takes the attitude of inquiry, it does not accept views on faith, it has the disposition to search for the why and the wherefore. Its attitude is entirely respectful, and also it is self-respecting. It has enough interest in the world at large to want to know causes and reasons, relations of one thing to another, the natural and inevitable development of one condition from another. It does not doubt in the way of imputing falsehood, or in attributing to any one a desire to deceive; rather it has the noble dissatisfaction with fixed ideas, with imperfect progress and imperfect thought, with stolid conservatism, that is ever contented with things as they are. It always wants to know more than it formerly did, to search deeper and deeper after truth, to obtain an ever widening circle of knowledge. It is able to understand something of Huxley's passion for truth-seeking when he said: "Scepticism is the highest duty, and blind faith is the one unpardonable sin."

The ordinary mind is in these days not quite as bad as the first type, although it certainly is

not as good as the second. It is partially trained, and has enough enlightenment to want to be more so. But its usual methods of thinking are apt to be somewhat dim, to make progress by a sort of *local* suggestion only. A certain image suggests another one that has happened in the course of experience to be connected with it, the second suggests a third, and so on. For instance, a voter before election has heard or read that the Republican party is the advocate of the policy of protection; protection means the fostering of domestic industries; that stands for the supremacy of the United States and the defeat of the foreign world; such a course would be helped along by men who had the patriotic spirit; and naturally the Republican candidates and voters are safe men to carry on the government. Such a train of thoughts is highly unintelligent. It may be true, but likewise it may be false. There is no method of discrimination involved in it, there is nothing more than a set of associations that happen to be placed next to each other. A somewhat different sort of experience in the voter might equally well have brought about an entirely different set of images,

which by their chance combination could give an opposite result. This sort of mental action is thinking, it is true, but it is very far from reasoning.

It is no more than the faculty of what we usually call having "general ideas." These ideas are concerned with the mass of impressions which hang about a certain thing; they make no attempt to sift these impressions, and assign to each one its proper place. There is no well-directed effort to focus the attention sharply on each and every feature, and consequently there can be no breaking up of the thing in question into its component parts. The Republican partisan, in our example above, thinks of the policy of protection in a very misty way. It simply means to him an act of safeguarding. Of course it really does mean that; but also it may mean much more, such as a narrow field of competition, high domestic and low foreign prices for one and the same article, bounties and subsidies from the government, a narrow and provincial taste in the people, and so on. On the other hand, it may mean a number of favorable ideas; and both sorts may be more or less ap-

plicable according to the circumstances of the temporary situation. The voter has no more than his "general idea," he does not break that idea up into all its constituent factors, and consequently if he gets at the truth it is merely by good fortune or chance. He has not proved himself to be a reasoning creature, for "general ideas" are used by animals in their thinking as well as by men.

The essence of reasoning is this fact of sharp focussing of the attention, this tearing apart of the thing in question. Mere looking at the thing is far from being enough. We must observe it, must examine it intelligently, must see how it is made up, and come to know as many of its characteristics — separately and collectively — as possible. This chair upon which I sit has as many aspects as I have ingenuity to discover; and if I had sufficient ingenuity and learning, I might find enough characteristics to fill the rest of my life recording. It is made up of wood, iron, leather, canvas; it has a certain form, a certain weight, a certain cubic capacity; it moves on castors, it turns on a swivel, it rocks on a spring; it stands in my

office, in front of the desk, sixteen feet from the grate; it is of a certain grade of excellence, it was made in New York, it was not made in Grand Rapids, and so on. In this way we could go on indefinitely and find positive or negative attributes to an endless extent. It is easy to recognize that the number of them is limited only by the knowledge and the power of observation of the examiner. And likewise it is easy to recognize that each observer will have his own method of separating these attributes, and thereafter of combining them and classifying them. And the more orderly and systematic his method is, the quicker and surer must his result necessarily be, in other words, the more effectively will he reason.

A simple application will show you the truth of this. Imagine, for a moment, the mental position of a savage, who for the first time saw this piece of furniture. It would seem a strange and wonderful thing to him; and as he discovered its various possibilities of motion, the thing might seem so marvellous that he would be tempted to make it into a god and pray to it. He would not reason about it, and there-

fore he would never, excepting by accident, find out what the real use of it was. If he managed to obtain some of the mental training which civilization provides, he might begin to notice its various parts, and the possibilities which they hold out. Even then he would be far from a certainty of finding out all there was to know. He would probably approach the usual condition of the ordinary person who has "general ideas" and nothing more. If he saw other chairs, say of a somewhat different shape, and saw people use them, he would without difficulty recognize what the function of this particular chair was. But the recognition would be no more than an act of putting similar things together, of matching things, somewhat in the way that a baby assorts differently colored counters.

This process would be entirely unlike that through which the thoroughly trained, reasoning man would go. Instead of seeing the thing in a misty, general way, he would observe and examine it carefully and minutely. His keen sight would instantly grasp most of its attributes; and almost as quickly he would classify them in a possibly

rough but nevertheless useful manner. The obviously useless and unimportant factors he would put aside, while the useful and important ones would be grouped together. In a very short time he would have enough facts at his command to come to a conclusion that could scarcely be wrong. In the case of the chair, even if he did not know what it was made for, he would inevitably be forced to the conclusion that it could best serve the purpose of supporting a considerable weight in various neighboring places, under circumstances of changing position. And the step to thinking of its use in supporting the weight of a man would be a very small one. His conclusion would inevitably follow from the premises, without the intervention of chance.

In this last paragraph I spoke of the reasoning man's ability to group the useful and the useless factors in separate categories. And almost certainly you said to yourself: How is he to know which is useful and which is useless? The answer is plain enough: while he would have no certain and infallible guide, he would nevertheless according to his store of wisdom

and profitable experience be able to make good working classifications. He would naturally make some mistakes, but the continued use of the factor of wisdom would gradually eliminate them. This factor is one of the few we cannot be positive about producing in a considerable degree by artificial efforts. Some of us have it in sufficient amounts, while others seem to be far removed from any acquaintance with it. You might call it a certain evenness and saneness of mind by which we react in a normal way to outside impressions; and you might compare it to an even state of bodily health by which some of us, who are fortunately endowed, are able to react in a profitable way to our physical environment, are able with the least wear and tear to get the greatest benefit out of our food and drink, the air we breathe, our sleep, our exercise, our work. Some of us are constantly going wrong in our health and therefore are always more or less in need of the care which an able medical man can give us. And in somewhat the same way others are ever failing more or less in our mental balance and health; but in this case we are unable to call

in a physician of the mind, and must worry along as best we can, either being satisfied with the inferior position to which our infirmity consigns us, or continuing to struggle day after day in the effort to conform our mental workings to the plan of the more generously endowed or better trained minds. It naturally follows that increased directness of effort will insure increased benefits in the long run.

There is another consideration which forces itself upon us when we examine the act of reasoning: we do not reason on all subjects with equal degrees of ease or success. You incline to one thing, while I find something else attractive. In the beginning the line of demarkation is drawn by congenital predisposition or by early environment; and in most of us the line is both clear and deeply cut. When we look at it intently we see that it separates the interesting from the uninteresting thing. The division may not be a conscious act, but all the same it exists. Whatever we recognize as gratifying our needs or pleasures will come in the first class; and these subjects are the ones in which we become most proficient and in

which we make the greatest progress. When we reason successfully it is always to gain a certain end, there must be some terminal point which we want to reach. And the wider our range of interests, the greater must our reasoning possibilities be. The peasant whose instinctive and acquired wants are confined to obtaining a bare shelter and a miserable subsistence can scarcely be expected to progress beyond the consideration of these primary necessities. But the man of education and taste, with a broad sweep of intellectual curiosity and intellectual wants, has whole worlds of interesting matters that are ever drawing him on, about which his mind is ever playing, which he becomes more and more familiar with. He examines all these keenly, he finds out all their attributes, he dissects them, he groups and classifies their characteristics in new as well as old ways. And the result of the whole process is that he finds out an ever increasing amount of truth.

In the comparison between these two men the stress was laid upon the range and possible amount of reason; and now we ought to pay more attention to the quality. It goes without

saying that in this quality there are grades, exactly as we find them in every sort of mental action. When in answer to a question we try to qualify the query, falling into the Yankee habit of replying to one question by asking another, we have a sort of reasoning, although a very elementary sort. We are trying to find out all that the question contains, are trying to see another side than that originally presented, are getting closer to the gist of the matter. If we never get beyond that stage, our progress is hardly worth speaking of; but if we recognize how far we have gone and use it as a measure for further progress, there is hope for a better ending. The step between that stage and reasoning by similarity or analogy is not a great one, but under proper conditions it may cover much ground. In simple cases analogy may mean very little: it certainly is not difficult to see the similarity of function in a chair and in a bench. They both have the characteristics of supporting weight and of being easily portable; and a very low order of intelligence and power of observation would put them to the same use. But when we have to do with things that have

increasing differences in their outward form, there is an increasing need for intensity of observation. The more complex the objects are, the greater is the opportunity for displaying reasoning ability in the ways already mentioned. And when we are capable of using the abstract characters in a problem instead of the concrete ones, we have arrived at a high grade of development.

Let us take a simple example and see how the distinction may be worked out in a practical fashion. The medical treatment of the various infectious diseases, such as measles, chicken-pox, scarlet fever, and the like, is in certain important respects very much the same in all. Now if we happen to be acquainted with the treatment of one, and from that infer by analogy the treatment of the others, our conclusion might be right or wrong, but at all events the process of arriving at it would be elementary in its nature. It surely would not be a safe guide in all the difficulties and problems of our business and social careers. But if, given the treatment of one of these sicknesses, we examine the characteristics of that

illness and find certain definite and regular features of it repeated again and again in the others, we might rationally arrive at the conclusion given above. Not only would the result of our thought be much surer, but also our methods would be of a much higher grade, and would stamp us as reasoning beings of a comparatively high order. Reasoning shows to best advantage in the clear light of pure thought, where there is no prejudice, no personal bias, no swerving from the narrow line of inquiry on account of considerations which are prompted by physical advantage. This is why circumstantial evidence in a complicated suit at law may be far safer to follow than the accounts of eye-witnesses, who are exceedingly apt to be swayed in one direction or another by their bodily limitations, by their errors in interpreting things which they see, and by their individual predilections. In a similar way the palæontologist, when he examines a single bone of an extinct animal, is able to reason out what the whole structure of the animal must be, and so surely reconstruct it that, if the whole skeleton were found later, it ought not to vary in material particulars

from the theoretical form. And likewise the value of the whole practice of theorizing rests on a similar foundation, so that when properly carried out it represents a much surer and much speedier method of progress than practical work alone could ever accomplish.

The very heart of the subject is to look at your problems simply, honestly, unaffectedly; to view them from every side with utter fairness; to pick out all their component parts, even to the extent of tearing them apart. Above all it is absolutely necessary to focus the mind's eye sharply upon them, and while you are at it to give them as intense a degree of attention as you possibly can. The elements of knowledge and wisdom will come as you grow in experience, and as the rewards of mental work come to you. The manner in which you combine all these factors is subject to your own regulation and control, for no one can ever do it for you. Similarly you are the only one to obtain direct benefit from your exertions, but the rewards in many ways are so great that you are justified in making those exertions as great as may be. And there is no department in your life that will remain

unaffected, for this is one of the great ways in which you can control your own destiny and make your own career.

Of the big things in life the first that will probably call for a decision is the choice of a vocation. Most people trust to chance or personal prejudice or the opinion of a friend or relative. That is a short-sighted way of going about the matter, it is not a reasonable way, and it scarcely deserves success. There is more in a vocation than earning a mere livelihood; almost anybody can do that, and small praise to him for his efforts. A vocation should mean to you a calling, an opportunity to exert your abilities in such ways that every bit of energy in you will find its best use. In addition your work must be of such a nature that you really love it in all its details, it must stimulate you, it must incite you to make greater and greater advances in it from year to year. The business world is overloaded and weighed down with men who are struggling in uncongenial employments; and they are precisely the ones who make up the great army of the unsuccessful. They make their choice in the haphazard

way against which you have been warned; and after they have fairly embarked in it, their energy becomes so stifled or the premature ties which they form are so binding that they are forever unable to undo the mistake. The decision may have been made through vanity or a stern necessity or the impatient haste and restlessness of foolish immaturity. But before long, habit fixes the man in his place, and a whole life of regrets and unhappiness is his fate.

Therefore, the first thing you must do is to take a personal inventory, to examine yourself honestly and fearlessly, to tear your character and disposition into their various component parts, and thus to ascertain what your real capabilities and longings are. Do not under any circumstances fall into the silly error of believing that you are better or keener or more finely constructed than the general run of men; it is very possible that you may be below the average. But at all events try honestly to find out the truth. Even if in certain ways you are inferior, it is almost certain that in one or more particulars you are even with or superior to your fellows. Here you are on the track of your vocation. As soon as you find

this out, you have made a great step in the direction of success. Now examine this strong point with the greatest care, learn all you can about it, and find out whether it will give you as much of an opportunity for mental growth as you reasonably could hope for, ascertain its possible rewards and losses in all ways, see whether the occupation is big enough and interesting enough to keep you thinking all the time. If it answers to these demands, you cannot go far wrong in selecting it for your vocation. The bare question of immediate financial return is of no importance, the question of "gentility" is of no importance, the question of competition is of no importance. When, in any occupation, the beginner's wage is high, the old worker's wage is pretty sure to be relatively low. But outside of this consideration, you may be sure that a small initial return is bound to increase as soon as you can give thoroughly good services for it.

An infinitely worse error than an impatience for a quick financial return is the longing for a "genteel" occupation. This is such a petty and unworthy consideration that a sensible man has little patience with it. It is the thing that floods

the market with narrow-chested clerks who can do little more than sell a spool of cotton or a yard of muslin, whose tenure of their positions hangs upon uncertain supports, whose services are of least worth as time passes and youth fades away. If your logical choice leads you to manual work, accept the decision gladly and proudly, and be happy in the thought that the work will ennoble you in the same way that you can dignify it. Grimy hands are vastly better than listless or feeble ones, for through them fortune and repute may come to you. More than one great railroad has for its head a man who started in the humblest position in the system; and more than a few workers in the coarser trades have achieved the widest success. Again, if your choice falls upon one of the professions, go about your preparation patiently, thoroughly, reverently. Under no circumstances ought you to plunge into active work as quickly as may be; rather should you lengthen the period of probation and fitting as much as you possibly can, in order to acquire the ability to render the best possible services.

In the same way that you should not fear thoroughness of preparation, so reason forbids

that you should fear the effect of competition. The first thought of a crowd of competitors is disquieting; but if you analyze the situation, you will find cause to welcome such a state of things. An occupation that is crowded is fairly sure to be in some salient ways markedly profitable. Therefore the rewards of successful competition are correspondingly great. Of course that is precisely what you want; but before you can make these rewards your own, you must prove your right to them by proving your superiority to the mass of your fellow-workers. Now the matter is placed in your own hands; and the more thorough your preparation, the nearer you come to perfect honesty, the more energetically you approach to giving entire satisfaction to the people who buy your services, the surer are you of being classed among the successful ones.

A similar thoughtfulness should be used in making all your important decisions. And when you once have created the habit for big things, you will find that it will also apply to the little ones. One great matter that is rarely looked at from the viewpoint of reason is marriage. This step is such a crucial one that if you make

a mistake in taking it, you are likely to pay the penalty in a life-long regret. And it is most unfortunate that the age and state of mind of the contracting man and woman are precisely those that most easily lend themselves to error. The usual attachment is apt to be the result of mere juxtaposition, aided by the natural need which most of us feel to love and be loved. And too often young people are weightily influenced by the hope of financial or commercial or social advancement. All these reasons for getting married are mighty poor ones, for they are short-sighted, incompetent, disregardful of the real facts in the case. The first question of all is whether you are really fitted in mind, body, and estate for entering into this contract; and before you decide the question, be sure to go over all its parts as honestly and as thoughtfully as may be. Consider what your ancestry is, what your present condition is, what your prospects are. Then, with equal frankness, consider the qualifications of your proposed spouse. Possibly you have not sufficient objectivity for the effective accomplishment of the task; and if this is so, then

go to the clearest-headed person you know, state the problem plainly in all its details, and work it out until you arrive at a definite conclusion. (Above all, keep yourself from believing that your sweatheart is perfect; she is not, by any manner of means, for perfect people do not grow. And the great question is whether with all her virtues and faults she is the right person for *you.*)

Even if you take all these precautions, you are liable to make a mistake; but such carefulness is bound to diminish the chances in great degree. (After you have reached a rational decision, let it be irrevocable. Make the engagement period as short as possible, and begin promptly to work out your life-problem. The same general rules hold good here as in other departments of conduct. Give as much of your best as you possibly can, do not demand too much in immediate return; endeavor to fit yourself for the responsibilities which will crowd upon you from day to day. Marriage is no more a one-sided contract than business is, than play and work are, than life is.)

(On reasonable lines like these you must plan

and develop your whole career. As little as possible should be left to chance, as much as possible must be laid out by design. Who are your friends? Are they worthy of you and your ideals? If so, cleave to them in all ways, show them your best parts, try to dignify yourself until you measure up to them. If they are not, discard them in a way a gentleman is bound to do, and win others. Make no compromise with them or with yourself, for such irrational action means that you are satisfied with the "short end of the bargain." Do you belong to a church? Then ask whether you are truly religious, whether you are honest and single-hearted in your beliefs, whether you are not actuated by motives of petty selfishness, of intellectual laziness, of moral cowardice. Reason out the matter from beginning to end, and stick to your decision with the strength of a reasonable conviction. What is your political belief, and how did you come by it? Is it the result of family or social gossip, is it founded upon principles or expediency, is it the growth of patriotism or self-interest? Here again you must state the problem to yourself in the plain-

est terms, you must find out the origin and development of the political parties, you must inform yourself of your national history, you must make yourself familiar with the words and works of politicians and statesmen. Then, after examining all the parts of the question, after reasoning the matter out, act as a high-minded man is bound to do.

Such a course of action is open to every one; and whoever shirks it wilfully deprives himself of the best fruits of civilization. The noblest part to play is the cleanest, the most consistent, the reasonable. With this ideal as a guide you cannot easily go wrong. And the more nearly you approximate to it, the better will your own life be, and the finer the influence which you are bound to have upon your little world. Each day will then be a satisfaction, and the community will be the better for your having lived in it.

CHAPTER XII

Will, the Controller

We have come to the last chapter, which has to do with the highest characteristics of the mind. Our progress has been through a series of grades, each one making easier the approach to the next. Also, each one, as you have seen, blends with its neighbor. In this chapter more than in any other all the various topics are combined ; for they all may serve as parts of the foundation which supports the beautiful superstructure of the will. The fact that men possess this lofty trait marks them off from all other created beings, and by the proper exercise of it men can best justify their dominion over the world. Therefore it is inevitable that the cultivation of the will must repay careful consideration in the largest degree, and lack of that cultivation must represent the most extravagant waste of opportunities.

The highest faculty of the mind is what we know under the name of will. In all likelihood

there is no other mental characteristic that is more talked about. But the talk is often not very plain and convincing, and doubtless because the usual ideas on the subject are not sufficiently clear. In ordinary conversation, we commonly hear will spoken of as if it meant a great effort of determination; again it is used to signify all acts that are controlled by purpose or intention; and, finally, it has been the term which certain psychologists employed to indicate any expression of the mind's conscious life. There must be inexactness or incompleteness of truth in so many definitions, and our present business is to get at the full truth of the matter.

Before we have worked out our ideas about will we are very apt to think of it as if it were a definite and separate part of the brain, and we talk of it as we should about an arm or a leg. Thus, we say that one man is born with a strong will, and another is cursed with a vacillating will, and so on. This view regards the whole matter as one of congenital endowment, as the color of one's eyes or skin is. And if this were true, there would be the end of the matter; for this function is of such supreme importance that a mere patch

of improvement is entirely inadequate. Either there must be a prospect and an assurance of full and reasonable control, or a cynical fatalism would be as logical and as praiseworthy as earnest striving for self-culture.

In one of the previous chapters we saw that all manifestations of conscious life had an inevitable tendency to express themselves in some sort of action. It made no difference whether the manifestation occurred in the form of an idea, a sensation, or an emotional feeling. Whatever it was, it put in motion energy, which naturally showed itself in some kind of impulse. Now, this impulse is such a hard and fast thing, it occurs so positively in a natural sequence, and without any intentional intervention on our part, that we should not appreciate it as being especially estimable. In fact, impulsive action — no matter what its results may be — is one of the lowest forms of mental activity. There is a sort of machine-like, automatic relationship between the originating impression and the resulting impulse that reminds one of the sending of an electric current from a certain station and the consequent ringing of a bell at another. The ultimate outcome

of the impulse is quite immaterial: it may be no more than the spasmodic contraction of the eyebrow or as much as the saving of a life. In both cases its origin is trivial and its ending is predetermined.

It may be hard at first thought to realize this, for as a rule we are distinctly conscious of only a small fraction of the processes which are at work in our minds. And it is especially difficult to make a just order in the comparative importance of things. The number of impressions that are made upon us is practically infinite; and if real, substantial action were to follow each one, we should be torn in a multitude of different ways. There must be some regulating agent; and the need of it is so patent that we could safely suppose or infer its existence even if we had no positive knowledge of it. In the same way, if we knew what tremendous burning power oxygen possesses and also knew that it entered into the composition of the air we breathe, we should be forced to suppose or infer that there must be present some other antagonistic gas, whose characteristic action would serve as a check or balance to that of the oxygen.

All through our bodies we find the same rule holding good, so that any force ~~in~~ them has a complement to restrain and regulate it. This has been proved repeatedly by different kinds of experiments; and, indeed, the truth holds good not only of us but also of the whole world. There is a continual struggle going on which makes life profitable; and every form of power has its beneficent inhibition or restraining force.

Now we have struck the very word that characterizes the controlling element in our mental organism. Our inhibitions exist in a potential form at birth, and as they grow we obtain more and more dominion over ourselves. A baby is helpless not only because he is weak, but also and even more because he has so few inhibitions that he cannot use the strength he possesses. His actions are wayward, impulsive; and they remain so until added maturity gives him a greater degree not merely of strength but rather of coördination. And what is true of his body is equally true of his mind. As he grows and absorbs the educating effects of ordinary life, he breathes in, as it were, a constantly increasing store of these inhibitions, which pull in vari-

ous ways, so that finally he is able to act and think in a straight, clean fashion.

After looking at the matter in this light, it is very easy to see why so few ideas manage to express themselves in action. They crowd in upon the mind in countless numbers: as soon as they enter they are met by this great horde of inhibitions; and most of them are throttled as soon as they are born. It is somewhat in the same way that seeds which are scattered on the ground struggle for existence. Millions of them are thrown broadcast over a wood or field, but a dozen or so manage to survive. Millions of fish eggs are deposited in a stream; but the fisherman is fortunate if he finds a few fish that contrive to live. The seeds and the eggs have their deadly law of inhibition, whose action, although fatal to countless numbers of growing organisms, is nevertheless favorable to the ultimate welfare of the survivors. The stronger and better endowed live on; the weaker are crushed out.

The ideas and impulses which correspond to the stronger organisms are those which have been fostered by our habits. Thus, impressions

are repeated again and again until their traces make up the pattern of our minds. As the plastic disposition of childhood sets (in the same way that plaster hardens), we progressively become confirmed in our ways of acting and thinking. Under certain circumstances we are bound to do a certain thing, and unless those circumstances are present, we are scarcely able or utterly unable to do it. When we have received a sufficient number of impressions about fire, we are unable to put our hands in a flame. There we have an inhibition, a force that is always on guard to keep us from committing a harmful act. If you multiply that one controlling force by many thousands, you will come to have some conception of the huge number of inhibitions that are constantly crowding out any waywardness of conduct.

It stands to reason that if an idea can be inhibited, the inhibition itself ought likewise to be controlled when it meets a superior force. And that is exactly what we find to be the case. As a practical instance let us take the child that has learned to fear fire. He grows up, and the fear of burning himself stays by him. At

the same time he is receiving other impressions, some of which are stronger than the terror of physical harm. Among these may be love for a brother, sister, or other relative, or some precious object. Now suppose that his little sister is in danger of being burned, or a well loved book or keepsake has fallen into the fire. Then his affection would act as a superior inhibition which would check or replace the original or inferior one. The substitution might be immediate and imperative, or hesitating and discriminating; but in the end the higher would replace the lower. In most cases the decision between the two goes on so rapidly that we do not notice it, or the process may be so common and usual that we are quite unconscious of it. But it is there, nevertheless, and we get the benefit of it in direct ratio to the quality of our training, or — stated otherwise — in direct ratio to the fixedness of our ideas.

The simplicity of these examples may seem to be out of touch with the rapid processes of our ordinary complex thought; but it is not more so than what we witness when any intricate action is resolved into its simplest factors. A sufficient

keenness of self-examination will show the influence which these laws have upon our great as well as our small affairs. Most of us do not consciously put plainly before our mind's eye the things that are to be examined; rather we get them in a sweeping glance or from the periphery of our mental vision. It is the same as that which happens in the use of our physical eye. Its focus is constantly changing, it is constantly shifting from one point to another. We have great difficulty in holding it steadily to one thing, and usually we obtain a partial success by repeatedly bringing it back to the one object. At the same time we are conscious of many things that lie outside of the focal point, and they are seen with ever decreasing distinctness as they progressively recede from the centre of vision. We have a natural tendency to wander over the whole field in an aimless manner; and if we set out to examine a certain part minutely and lengthily, we must make distinct and repeated efforts to overcome our wandering disposition.

We are now in a position to reduce these statements to terms of will. As was stated above, there is no distinct and separate organ of the will,

and what we mean by the term is the conscious choosing of an idea or course of action out of a great number of possible ideas or courses; and after the choosing has been done, there must follow a steady adherence to the thing preferred. Of course we do not, as a rule, sit down and say to ourselves, "I am going to pick and choose; I am going to exercise my faculty of will." The process is not by any means as cold-blooded as that. On the contrary, it goes along so smoothly and quietly, the choosing is done in such a routine-like fashion, that we scarcely know what is happening. It is only in situations of unusual difficulty or complexity that the process becomes a clearly distinct one. And then we commonly find two sources of trouble: one in ascertaining which point is the best to select, and another in adhering steadfastly to it.

These questions are decided by the training we have obtained; and the training which we give ourselves is apt to be better than that which we get from others. As we grow from childhood we receive our habits of thought, our inhibitions, in the quantity and quality that are determined by our environment. Each one of them has its

function in pulling us in one direction or another, the weaker giving way to the stronger, the lower succumbing to the higher. Those which have had most stress laid upon them will have most vitality, no matter what their intrinsic value may be. And, therefore, will-power in one man may mean something quite different from what it does in another, although its manner of growth is always the same. All of us have a set of impressions or ideas which serve as our working material. If we pick out any of these and concentrate our attention sharply upon it, we shall find that it practically fills up the whole of our consciousness. The more we pay attention to it, then, the more we do that thing and nothing else. On the other hand, the more our attention wavers, the more uncertain we are and the less we accomplish in that direction.

The untrained mind vacillates spontaneously among the numberless ideas that swim within the range of its vision, and the great effort of systematic culture is to simplify this action, to exclude everything excepting the one chosen idea, and to focus all possible voluntary attention upon that. Time and again the mind will wander off

the point, and precisely as often the attention must be redirected to it. And if our inhibitions are strongly developed, then we shall be correspondingly free from counter-influences which seek to pull us away in useless directions. The gist of the matter, therefore, is to develop the greatest amount of voluntary attention, and to learn how to focus it as sharply as may be; and after that to develop the mental custom of acting as promptly as possible in certain well-known ways. In most cases, as soon as we are called upon to make a decision, the right path is so well known that we need no more than this fixation of the attention to guarantee the appropriate action. In more complicated cases, the question resolves itself to settling for ourselves what is the best course to take. Here we should have to fall back upon our faculty of reasoning, of balancing carefully all the various possibilities. But as soon as the decision has been made, all hesitation must instantly cease, discussion must end, and nothing further than intense fixation of the attention must be allowed.

Naturally enough there is a limit to such mental effort, beyond which we are unable to progress;

and the weaker and less trained our mental condition is, the sooner is that limit reached. Your common sense forbids you to expect a child to go as far in an effort of will as an adult, and common sense comes to this conclusion from the numberless similar instances it is constantly having in general life. Also you know by lifelong experience that too great a persistence in anything is apt to lead to some pathological or unnatural result. If you contract a muscle in a certain rhythm often enough, you will obtain the beneficial results of exercise, but if you use too much force, or continue it too long, you will suffer exhaustion and injury. A normal amount of bicycle-riding is usually healthful, an extravagant amount is fairly sure to produce a tumultuous and worn-out heart action. A reasonable amount of swimming gives fine exercise, an unreasonably great amount leads to weakness, a chill, a cramp, possibly to death. What we may call the normal amount depends upon the varying element of bodily strength and resistance, and in the seasoned athlete may cover all the exertions he is likely to put forth.

This is analogous to what sometimes happens with the mind, especially in young or untrained

persons. For some reason or other — it may be irritation, or fatigue, or lack of health, or bad environment, or many other reasons — the will slips away from a pliable and intelligent control. It falls into a sort of over-tension or spasm that is very similar to the spasm into which an abused muscle falls. In the latter case we immediately put the tortured tissue at rest, or we rub it and try to give it some different form of work to do. In the first case, which we may call obstinacy or sulkiness or "pigheadedness," a like sort of treatment will give relief. There is no more use in reasoning with such a condition of mind than there is in reasoning with a balky horse; and it is just as foolish to attempt to force one as the other. If we broke the horse's back as a cure for balkiness, we should be acting as wisely as when we try to break a child's will to cure him of obstinacy. Under no circumstances must we enter into such a struggle, for we may not put ourselves on the plane of a cramped mind.

When such conditions come to exist, the rational thing to do is to dissolve the spasm; and the simplest way to do it is to divert the mind.

The strained and stupefied attention must be relieved, and as quickly and as smoothly as possible. You must postpone the struggle on the point at issue, and if you keep in mind what you now know about the will, the struggle will finally be unnecessary. Direct the attention to something else, preferably of a pleasant nature. It may be necessary to use such diversion several times, on the same plan that "typewriter's cramp" may need successive periods of rest. But each diversion will remove some portion of unnatural spasm, and successively each attempt to bring the mind to a reasonable standpoint will more nearly attain its object. You must not for a moment suppose that all this applies to children only. As a matter of fact you also may be constantly falling into fits of obstinacy or sulkiness or balkiness. And when you find yourself dropping into this deplorable state, you must recognize the plain truth, you must divert your attention, break the spasm, and return as soon as may be to a rational pliability and healthy strength of will.

Very likely by this time you are saying to yourself that to exercise one's will-power about

a thing means very much the same as to think about it. And, speaking in a rather rough fashion, that is the truth. Most of us do very little thinking; we slip and slide into routine, we accept our opinions, and their outcome as well, in much the same complacent manner that we accept the weather. We do not define impressions clearly enough, we do not hold them up before our attention long enough. If they be in the way of our customary mental habits they coincide with our ordinary jog-trot of ideas, and we then accept them as settled truth. It is only the exceptional man who approximates to even a fair degree of freedom of the will; and when we find such a one, we know that he must accomplish great things. As an example, take Washington, who in the midst of uncertainties, crushing disadvantages, and almost overwhelming discouragements, persisted in holding before his mind's eye the ideal of federated colonies and a new nation; and the moral uplift to his character was so great that he has forever after impressed his personality upon the world as that of a giant among men. As an example from a widely different field, take Jenner, the physician, who

labored for nearly a score of years to elaborate his theory of vaccination. In a time of comparative ignorance and unintelligent empiricism he kept his attention steadfastly fixed on a certain mental picture, he kept it there with superb persistence through the greater part of a generation of hard and unremunerative labor. And as a result he showed the world how it might be freed from one of its worst scourges. Or look at the heroes of arctic exploration, who in order to accomplish an ideal suffer unspeakable trials, braving sickness and death, if only they may attain their goal. "With such over-charges of self-will are men's frail bodies fitted for great things, for vast schemes of thought, or for swift flights of force, according as the cerebral machine is framed."

These simple principles of conduct may be used for every one of you in the great and small things of life. First of all, you must watch your daily lives, must try to sift as well as you can the impressions that your minds receive, must embody in your conduct the cleanest and finest principles of action. You must have the habit of forming convictions, of being scrupulous.

There are certain things which you *must* do; and the oftener you accomplish the doing, the easier must the growth of will-power be. These things are the plain, everyday virtues, the simple and wholesome rules of conduct which you are all familiar with by name. We must *think* of them, think of their applications, and not allow our attention to waver from them. Temptation means nothing more than a badly trained will. The criminal knows that his career will be short and hard; he knows that the same amount of energy and ability which he uses in his illegitimate pursuits could if rightly directed make for him a comfortable and honorable position in the world. He knows this fully as well as you and I, and possibly better. But he cannot keep his attention fixed upon the idea, he is constantly being led astray by dancing thoughts of pleasurable excitement, ease, bravado; his inhibitions are too few and too weak.

In this department of life it is a sin to make compromises. If you are playing a game, you must have clearly before you the idea of winning, and you must never lose sight of it. The habit of believing that exertion in the first part

is unnecessary, and that at the last moment fortune may turn, is thoroughly vicious and weak. This is the habit of wavering attention. The boy in school who evades steady, honest work, depending upon good luck or a season of "cramming" before examinations, is the victim of a weak will, of flickering attention. He has allowed his mind to wander from the main purpose, and of course he obtains little or no good from his schooling. The employé who seeks to do the least amount of work, who would like to be the last to come to the place of business and the first to leave, who shirks responsibility, who is fearful lest he do a bit more than he is paid for, is the weak-willed or obstinate hanger-on. He accomplishes nothing, the community is not a whit the better for his having lived, and he transmits an example of futility and pettiness which must make harder the life of every person whom he can possibly influence.

In no respect can a man show a finer quality of will-power than in his own private, intimate life. All of you have an indefinite number of temptations to be one sort of person while seeming to be another. The outside world sets a

certain standard, and insists upon your living up to it. You do not require much personal effort to answer the demands; for you have a continual stream of influences, in the way of your worldly considerations, to keep you up to the mark. Thus, you are required to live in a certain manner and routine, to dress in a certain fashion, to demean yourself after certain accepted patterns; you have already laid out for you certain accepted tastes, which tell you what you must admire and what you must condemn; your education and business training unite in making you conform to well-understood methods of external life. You know quite well that if you transgress or ignore these rules, you will suffer in your physical comfort or worldly success, and necessity maintains the ideas so steadily before your eyes that there is little opportunity for you to forget them. Competition is a potent stimulant to exertion, and the needs of a family are strenuous reminders of a forgotten duty.

But all this is in no way concerned with that great part of you which is removed from every sort of external inspection, which lives in the

secret places of your minds and hearts, which in the last analysis is the very core and essence of your being. Purity of thought, justness and sweetness of intention, rectitude in personal relations, charity of opinion, forbearance in the shortcomings or seemingly anomalous standards of others — these are the intrinsic qualities that stand for nobility of character. And the cultivation of them is the special province of the will. There is no possible make-believe in the matter: either you embody them in your character or you do not. And when you make your choice, you must not be guided by the hope of social profit, or money making, or additional chances of bodily comfort, or any other temporary advantage. Understand clearly that the good you are to get out of the decision primarily touches you alone, but that in the long run it will undoubtedly make your life quite different from what it otherwise would be. It will give you an abiding peace that is as grateful as a pine-scented wind to the tired city worker; it will keep your mind fresh and young in the same way that a vigorous life in the fields and woods will restore a jaded body; it will give you a clear and beautiful view of the world and its

doings in the same way that a mountain climb unrolls miles upon miles of laughing water and smiling land before your fascinated eyes.)

You can obtain these benefits by understanding the problem, and by cultivating the habit of reacting as definitely as may be to the ideals which you thus set. You can be as practical, as hard-headed in business affairs, as whole-souled, as joyful, as fun-loving, as hearty a good fellow as you wish or as you could under any other dispensation. For example, you can love a horse, can know his good points, can own one (as I advise you to do if you can well afford the luxury), without succumbing to the belittling temptation of using him as a means of gratifying a morbid excitement, of gambling upon his probable speed in unfair contests. You can make friends, can have a jolly time with them, can bind them to you by ties of loyalty and well doing, without recourse to the degrading help of excessive drinking, boisterous feasts, riotous orgies. You can be manly without braggadocio, without giving yourself up to moral and physical disease, without soiling yourself so thoroughly that no amount of careful living in later years can ever efface the stains.

You can be affectionate and gentle-minded without being effeminate, without a touch of the "goody-goody" conduct that all healthy minds rightly despise. In fact, in all the departments of life you can be vigorous, responsive to normal influences, happy, self-respecting, and successful, without giving way to the shortsighted errors and the silly viciousness that so commonly spoil the first stages of active life.

The time to guard against these misfortunes is in the plastic years of youth. Then the mind and character are being set, and in later years, when added maturity gives opportunities for unprofitable reflection, the chance to remould one's self has passed away forever. Form your ideas as clearly as you can, reason out the grounds upon which they rest, and take plenty of time for the reasoning. Consult with the best men you can reach, read the best books that are at your command; but after that has been done, *reason with yourself*. You will be surprised to find that getting at the real truth is much simpler than you supposed, if you will only search for it honestly, unaffectedly, and then with a never weakening grasp hold fast to it. See it

before you as a pillar of cloud by day and a pillar of fire by night. Whenever your eyes stray away, and they certainly will, bring them back again and again to the picture which your intelligence and good sense have set up. When your attention is distracted by trials, by weakness, by the many-sided temptations of active life, remember the wavering and unsteady sight of the child and the steady, keenly scrutinizing gaze of the grown man, and resolve to be mature. In past times and under a less efficient civilization, men and women were taught the beauty of dying for their convictions, in the hope of a future reward from which the ungodly were to be excluded. But now with increasing freedom of mind we believe in living for our convictions, in living for them nobly and openly, in the hope of a universal salvation of peace, of clean living, of reasonable thinking, of the unvexed enjoyment of all the wonderful ways of life which stretch out before those who know how to order the growth and control of their minds.

Now that you have completed this short account of the various topics included in our sub-

ject, the really earnest part of the work begins. If no permanent impression has been made upon you, the book has entirely failed of its object. If, on the other hand, you are able to understand yourself a little better than formerly, both you and I have gained a good reward. My reward is a passive one; yours must be decidedly active. If you are to justify our common work, you must practically embody in your life the ideas that are set forth above. *You* must now begin the earnest part of the work by endeavoring to act out what you have read.

"The *dictum* that all men are born free and equal is plainly true only in an academic interpretation. It certainly is not true as far as the actual facts of their careers can show. As far as one can see, there is as little actual freedom in the world as one can possibly imagine. Almost every adult, on reaching maturity, has a certain range of limitations, working much more rigorously than statutes enacted by law, which determine in what ways he must advance, stand still, or go backward." This is the sort of bondage from which you must strive to free yourself. It is not a bondage that results from your

neighbors' acts nor from the hard laws of society, but merely from the facts of your own organization and the struggles which you make to adapt yourself to your environment. The latter factor you have various means of knowing; the former — your own mental constitution — you are apt to be ignorant of. And until you manage to obtain a fair working knowledge of both, your attempts to solve the problem of life must be as futile as those of a boy who tries to solve a problem in algebra without knowing the meaning of the various terms employed.

Above everything else do not forget what a knowledge of living really means. Consider what you are here for, what part you are able to play, what part you would like to play, and what return you are able to command. Use your faculty of attention in observing the problem in an intense, many-sided manner; let the best mental habits at your command be brought to your service in making the decision; employ your reason in adjusting the different elements in their proper relative positions; and, finally, to concentrate all the power of your will to practise in the last degree the conclusions that your reason has set.

These are the great central forces of your mental life : attention, habit, reason, will. Everything else spreads out from them as spokes spread out from the hub of a wheel. If you use them as they should be used, you cannot fail in life. Then you will obtain more than temporary gratifications, for your conduct will be that of a man with an inward mission. As I have said before: the man who sees in life the opportunity to express himself in the largest terms, who after ascertaining what faculties he has determines to develop them to the highest possible efficiency, who is capable of seeing the sweetness and joy that lie all about him, who being proud dares not allow his body or mind to be defiled, he is the one who obtains the big rewards, the big successes.

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